RAW SEQUENCE LISTING
ERROR REPORT

BIOTECH. JLOGY
SYSTEMS
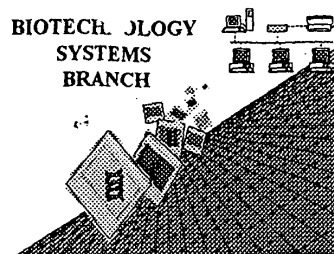BRANCH

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: _O9/759,508A_

Source: _OIPE_

Date Processed by STIC: _5/30/2001_

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OIPE

RAW SEQUENCE LISTING   DATE: 05/30/2001
PATENT APPLICATION: **US/09/759,508A**   TIME: 11:49:00

Input Set : **A:\00786.381002.SEQLIST.TXT**
Output Set: **C:\CRF3\05302001\I759508A.raw**

Does Not Comply
Corrected Diskette Needed

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 4 <110> APPLICANT: Fishman, Mark C.
 6 <120> TITLE OF INVENTION: Methods for Diagnosing and Treating
 7        Heart Disease
 9 <130> FILE REFERENCE: 00786/381002
11 <140> CURRENT APPLICATION NUMBER: US 09/759,508A
12 <141> CURRENT FILING DATE: 2001-01-12
14 <150> PRIOR APPLICATION NUMBER: US 60/175,787
15 <151> PRIOR FILING DATE: 2000-01-12
17 <160> NUMBER OF SEQ ID NOS: 11
19 <170> SOFTWARE: FastSEQ for Windows Version 4.0
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ERRORED SEQUENCES

Due to size of sequence, only errored pages shown.

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1395 <211> LENGTH: 26926
1396 <212> TYPE: PRT
1397 <213> ORGANISM: Homo sapiens
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1403             20                  25                  30
1404 Pro Val Pro Glu Val Ser Trp Phe Arg Asp Gly Gln Val Ile Ser Thr
1405             35                  40                  45
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1407     50                  55                  60
1408 Leu Thr Ile Pro Ala Val Thr Lys Ala Asn Ser Gly Arg Tyr Ser Leu
1409 65                  70                  75                  80
1410 Lys Ala Thr Asn Gly Ser Gly Gln Ala Thr Ser Thr Ala Glu Leu Leu
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1414 Met Thr Val Arg Gln Gly Ser Gln Val Arg Leu Gln Val Arg Val Thr
1415             115                 120                 125
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1419 145                 150                 155                 160
1420 Leu Leu Ile Ala Glu Ala Tyr Pro Glu Asp Ser Gly Thr Tyr Ser Val
1421             165                 170                 175
1422 Asn Ala Thr Asn Ser Val Gly Arg Ala Thr Ser Thr Ala Glu Leu Leu
1423             180                 185                 190
1424 Val Gln Gly Glu Glu Glu Val Pro Ala Lys Lys Thr Lys Thr Ile Val
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2609 9665             9670             9675             9680
2610 Thr Cys Thr Leu Val Ile Pro Gln Ser Arg Arg Ser Asp Thr Gly Leu
2611         9685             9690             9695
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2629 9825             9830             9835             9840
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E--> 2695      10355              10360              10365
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      2832 Arg Val Asp Leu Ile Gln Asp Leu Pro Arg Val Glu Leu Gln Ile Lys
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E--> 2857   11650           11655           11660
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       2934 Phe Arg Val Thr Ala Val Asn Glu Tyr Gly Pro Gly Val Pro Thr Asp
E--> 2935           12275               12280               12285
       2936 Val Pro Lys Pro Val Leu Ala Ser Asp Pro Leu Ser Glu Pro Asp Pro
E--> 2937           12290            · 12295               12300
       2938 Pro Arg Lys Leu Glu Ala Thr Glu Met Thr Lys Asn Ser Ala Thr Leu
E--> 2939 12305                 12310               12315               12320
       2940 Ala Trp Leu Pro Pro Leu Arg Asp Gly Gly Ala Lys Ile Asp Gly Tyr
E--> 2941                 12325               12330               12335
       2942 Ile Ile Ser Tyr Arg Glu Glu Glu Gln Pro Ala Asp Arg Trp Thr Glu
E--> 2943                 12340               12345               12350
       2944 Tyr Ser Val Val Lys Asp Leu Ser Leu Val Val Thr Gly Leu Lys Glu
E--> 2945           12355               12360               12365
       2946 Gly Lys Lys Tyr Lys Phe Arg Val Ala Ala Arg Asn Ala Val Gly Val
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E--> 2947     12370           12375           12380
     2948 Ser Leu Pro Arg Glu Ala Glu Gly Val Tyr Glu Ala Lys Glu Gln Leu
E--> 2949 12385           12390           12395           12400
     2950 Leu Pro Pro Lys Ile Leu Met Pro Glu Gln Ile Thr Ile Lys Ala Gly
E--> 2951           12405           12410           12415
     2952 Lys Lys Leu Arg Ile Glu Ala His Val Tyr Gly Lys Pro His Pro Thr
E--> 2953           12420           12425           12430
     2954 Cys Lys Trp Lys Lys Gly Glu Asp Glu Val Val Thr Ser Ser His Leu
E--> 2955           12435           12440           12445
     2956 Ala Val His Lys Ala Asp Ser Ser Ser Ile Leu Ile Ile Lys Asp Val
E--> 2957           12450           12455           12460
     2958 Thr Arg Lys Asp Ser Gly Tyr Tyr Ser Leu Thr Ala Glu Asn Ser Ser
E--> 2959 12465           12470           12475           12480
     2960 Gly Thr Asp Thr Gln Lys Ile Lys Val Val Val Met Asp Ala Pro Gly
E--> 2961           12485           12490           12495
     2962 Pro Pro Gln Pro Pro Phe Asp Ile Ser Asp Ile Asp Ala Asp Ala Cys
E--> 2963           12500           12505           12510
     2964 Ser Leu Ser Trp His Ile Pro Leu Glu Asp Gly Gly Ser Asn Ile Thr
E--> 2965           12515           12520           12525
     2966 Asn Tyr Ile Val Glu Lys Cys Asp Val Ser Arg Gly Asp Trp Val Thr
E--> 2967           12530           12535           12540
     2968 Ala Leu Ala Ser Val Thr Lys Thr Ser Cys Arg Val Gly Lys Leu Ile
E--> 2969 12545           12550           12555           12560
     2970 Pro Gly Gln Glu Tyr Ile Phe Arg Val Arg Ala Glu Asn Arg Phe Gly
E--> 2971           12565           12570           12575
     2972 Ile Ser Glu Pro Leu Thr Ser Pro Lys Met Val Ala Gln Phe Pro Phe
E--> 2973           12580           12585           12590
     2974 Gly Val Pro Ser Glu Pro Lys Asn Ala Arg Val Thr Lys Val Asn Lys
E--> 2975           12595           12600           12605
     2976 Asp Cys Ile Phe Val Ala Trp Asp Arg Pro Asp Ser Asp Gly Gly Ser
E--> 2977           12610           12615           12620
     2978 Pro Ile Ile Gly Tyr Leu Ile Glu Arg Lys Glu Arg Asn Ser Leu Leu
E--> 2979 12625           12630           12635           12640
     2980 Trp Val Lys Ala Asn Asp Thr Leu Val Arg Ser Thr Glu Tyr Pro Cys
E--> 2981           12645           12650           12655
     2982 Ala Gly Leu Val Glu Gly Leu Glu Tyr Ser Phe Arg Ile Tyr Ala Leu
E--> 2983           12660           12665           12670
     2984 Asn Lys Ala Gly Ser Ser Pro Pro Ser Lys Pro Thr Glu Tyr Val Thr
E--> 2985           12675           12680           12685
     2986 Ala Arg Met Pro Val Asp Pro Pro Gly Lys Pro Glu Val Ile Asp Val
E--> 2987           12690           12695           12700
     2988 Thr Lys Ser Thr Val Ser Leu Ile Trp Ala Arg Pro Lys His Asp Gly
E--> 2989 12705           12710           12715           12720
     2990 Gly Ser Lys Ile Ile Gly Tyr Phe Val Glu Ala Cys Lys Leu Pro Gly
E--> 2991           12725           12730           12735
     2992 Asp Lys Trp Val Arg Cys Asn Thr Ala Pro His Gln Ile Pro Gln Glu
E--> 2993           12740           12745           12750
     2994 Glu Tyr Thr Ala Thr Gly Leu Glu Glu Lys Ala Gln Tyr Gln Phe Arg
E--> 2995           12755           12760           12765
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RAW SEQUENCE LISTING   DATE: 05/30/2001
PATENT APPLICATION: US/09/759,508A   TIME: 11:49:02

Input Set : A:\00786.381002.SEQLIST.TXT
Output Set: C:\CRF3\05302001\I759508A.raw


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     2996 Ala Ile Ala Arg Thr Ala Val Asn Ile Ser Pro Pro Ser Glu Pro Ser
E--> 2997      12770          12775          12780
     2998 Asp Pro Val Thr Ile Leu Ala Glu Asn Val Pro Pro Arg Ile Asp Leu
E--> 2999 12785          12790          12795                    12800
     3000 Ser Val Ala Met Lys Ser Leu Leu Thr Val Lys Ala Gly Thr Asn Val
E--> 3001           12805          12810          12815
     3002 Cys Leu Asp Ala Thr Val Phe Gly Lys Pro Met Pro Thr Val Ser Trp
E--> 3003           12820          12825          12830
     3004 Lys Lys Asp Gly Thr Leu Leu Lys Pro Ala Glu Gly Ile Lys Met Ala
E--> 3005           12835          12840          12845
     3006 Met Gln Arg Asn Leu Cys Thr Leu Glu Leu Phe Ser Val Asn Arg Lys
E--> 3007      12850          12855          12860
     3008 Asp Ser Gly Asp Tyr Thr Ile Thr Ala Glu Asn Ser Ser Gly Ser Lys
E--> 3009 12865          12870          12875                    12880
     3010 Ser Ala Thr Ile Lys Leu Lys Val Leu Asp Lys Pro Gly Pro Pro Ala
E--> 3011           12885          12890          12895
     3012 Ser Val Lys Ile Asn Lys Met Tyr Ser Asp Arg Ala Met Leu Ser Trp
E--> 3013           12900          12905          12910
     3014 Glu Pro Pro Leu Glu Asp Gly Gly Ser Glu Ile Thr Asn Tyr Ile Val
E--> 3015           12915          12920          12925
     3016 Asp Lys Arg Glu Thr Ser Arg Pro Asn Trp Ala Gln Val Ser Ala Thr
E--> 3017      12930          12935          12940
     3018 Val Pro Ile Thr Ser Cys Ser Val Glu Lys Leu Ile Glu Gly His Glu
E--> 3019 12945          12950          12955                    12960
     3020 Tyr Gln Phe Arg Ile Cys Ala Glu Asn Lys Tyr Gly Val Gly Asp Pro
E--> 3021           12965          12970          12975
     3022 Val Phe Thr Glu Pro Ala Ile Ala Lys Asn Pro Tyr Asp Pro Pro Gly
E--> 3023      12980          12985          12990
     3024 Arg Cys Asp Pro Pro Val Ile Ser Asn Ile Thr Lys Asp His Met Thr
E--> 3025      12995          13000          13005
     3026 Val Ser Trp Lys Pro Pro Ala Asp Asp Gly Gly Ser Pro Ile Thr Gly
E--> 3027      13010          13015          13020
     3028 Tyr Leu Leu Glu Lys Arg Glu Thr Gln Ala Val Asn Trp Thr Lys Val
E--> 3029 13025          13030          13035                    13040
     3030 Asn Arg Lys Pro Ile Ile Glu Arg Thr Leu Lys Ala Thr Gly Leu Gln
E--> 3031           13045          13050          13055
     3032 Glu Gly Thr Glu Tyr Glu Phe Arg Val Thr Ala Ile Asn Lys Ala Gly
E--> 3033           13060          13065          13070
     3034 Pro Gly Lys Pro Ser Asp Ala Ser Lys Ala Ala Tyr Ala Arg Asp Pro
E--> 3035           13075          13080          13085
     3036 Gln Tyr Pro Pro Ala Pro Pro Ala Phe Pro Lys Val Tyr Asp Thr Thr
E--> 3037      13090          13095          13100
     3038 Arg Ser Ser Val Ser Leu Ser Trp Gly Lys Pro Ala Tyr Asp Gly Gly
E--> 3039 13105          13110          13115                    13120
     3040 Ser Pro Ile Ile Gly Tyr Leu Val Glu Val Lys Arg Ala Asp Ser Asp
E--> 3041           13125          13130          13135
     3042 Asn Trp Val Arg Cys Asn Leu Pro Gln Asn Leu Gln Lys Thr Arg Phe
E--> 3043      13140          13145          13150
     3044 Glu Val Thr Gly Leu Met Glu Asp Thr Gln Tyr Gln Phe Arg Val Tyr
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E--> 3045        13155            13160            13165
     3046 Ala Val Asn Lys Ile Gly Tyr Ser Asp Pro Ser Asp Val Pro Asp Lys
E--> 3047        13170            13175            13180
     3048 His Tyr Pro Lys Asp Ile Leu Ile Pro Pro Glu Gly Glu His Asp Ala
E--> 3049 13185            13190            13195            13200
     3050 Asp Leu Arg Lys Thr Leu Ile Leu Arg Ala Gly Val Thr Met Arg Leu
E--> 3051        13205            13210            13215
     3052 Tyr Val Pro Val Lys Gly Arg Pro Pro Pro Lys Ile Thr Trp Ser Lys
E--> 3053        13220            13225            13230
     3054 Pro Asn Val Asn Leu Arg Asp Arg Ile Gly Leu Asp Ile Lys Ser Thr
E--> 3055        13235            13240            13245
     3056 Asp Phe Asp Thr Phe Leu Arg Cys Glu Asn Val Asn Lys Tyr Asp Ala
E--> 3057 13250            13255            13260
     3058 Gly Lys Tyr Ile Leu Thr Leu Glu Asn Ser Cys Gly Lys Lys Glu Tyr
E--> 3059 13265            13270            13275            13280
     3060 Thr Ile Val Val Lys Val Leu Asp Thr Pro Gly Pro Pro Ile Asn Val
E--> 3061        13285            13290            13295
     3062 Thr Val Lys Glu Ile Ser Lys Asp Ser Ala Tyr Val Thr Trp Glu Pro
E--> 3063        13300            13305            13310
     3064 Pro Ile Ile Asp Gly Gly Ser Pro Ile Ile Asn Tyr Val Val Gln Lys
E--> 3065        13315            13320            13325
     3066 Arg Asp Ala Glu Arg Lys Ser Trp Ser Thr Val Thr Thr Glu Cys Ser
E--> 3067        13330            13335            13340
     3068 Lys Thr Ser Phe Arg Val Pro Asn Leu Glu Glu Gly Lys Ser Tyr Phe
E--> 3069 13345            13350            13355            13360
     3070 Phe Arg Val Phe Ala Glu Asn Glu Tyr Gly Ile Gly Asp Pro Gly Glu
E--> 3071        13365            13370            13375
     3072 Thr Arg Asp Ala Val Lys Ala Ser Gln Thr Pro Gly Pro Val Val Asp
E--> 3073        13380            13385            13390
     3074 Leu Lys Val Arg Ser Val Ser Lys Ser Ser Cys Ser Ile Gly Trp Lys
E--> 3075        13395            13400            13405
     3076 Lys Pro His Ser Asp Gly Gly Ser Arg Ile Ile Gly Tyr Val Val Asp
E--> 3077        13410            13415            13420
     3078 Phe Leu Thr Glu Glu Asn Lys Trp Gln Arg Val Met Lys Ser Leu Ser
E--> 3079 13425            13430            13435            13440
     3080 Leu Gln Tyr Ser Ala Lys Asp Leu Thr Glu Gly Lys Glu Tyr Thr Phe
E--> 3081        13445            13450            13455
     3082 Arg Val Ser Ala Glu Asn Glu Asn Gly Glu Gly Thr Pro Ser Glu Ile
E--> 3083        13460            13465            13470
     3084 Thr Val Val Ala Arg Asp Asp Val Val Ala Pro Asp Leu Asp Leu Lys
E--> 3085        13475            13480            13485
     3086 Gly Leu Pro Asp Leu Cys Tyr Leu Ala Lys Glu Asn Ser Asn Phe Arg
E--> 3087        13490            13495            13500
     3088 Leu Lys Ile Pro Ile Lys Gly Lys Pro Ala Pro Ser Val Ser Trp Lys
E--> 3089 13505            13510            13515            13520
     3090 Lys Gly Glu Asp Pro Leu Ala Thr Asp Thr Arg Val Ser Val Glu Ser
E--> 3091        13525            13530            13535
     3092 Ser Ala Val Asn Thr Thr Leu Ile Val Tyr Asp Cys Gln Lys Ser Asp
E--> 3093 '      13540            13545            13550
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      3094 Ala Gly Lys Tyr Thr Ile Thr Leu Lys Asn Val Ala Gly Thr Lys Glu
E--> 3095           13555                 13560                 13565
      3096 Gly Thr Ile Ser Ile Lys Val Val Gly Lys Pro Gly Ile Pro Thr Gly
E--> 3097      13570                 13575                 13580
      3098 Pro Ile Lys Phe Asp Glu Val Thr Ala Glu Ala Met Thr Leu Lys Trp
E--> 3099 13585               13590                 13595               13600
      3100 Ala Pro Pro Lys Asp Asp Gly Gly Ser Glu Ile Thr Asn Tyr Ile Leu
E--> 3101           13605                 13610                 13615
      3102 Glu Lys Arg Asp Ser Val Asn Asn Lys Trp Val Thr Cys Ala Ser Ala
E--> 3103           13620                 13625                 13630
      3104 Val Gln Lys Thr Thr Phe Arg Val Thr Arg Leu His Glu Gly Met Glu
E--> 3105           13635                 13640                 13645
      3106 Tyr Thr Phe Arg Val Ser Ala Glu Asn Lys Tyr Gly Val Gly Glu Gly
E--> 3107      13650                 13655                 13660
      3108 Leu Lys Ser Glu Pro Ile Val Ala Arg His Pro Phe Asp Val Pro Asp
E--> 3109 13665               13670                 13675               13680
      3110 Ala Pro Pro Pro Pro Asn Ile Val Asp Val Arg His Asp Ser Val Ser
E--> 3111           13685                 13690                 13695
      3112 Leu Thr Trp Thr Asp Pro Lys Lys Thr Gly Gly Ser Pro Ile Thr Gly
E--> 3113           13700                 13705                 13710
      3114 Tyr His Leu Glu Phe Lys Glu Arg Asn Ser Leu Leu Trp Lys Arg Ala
E--> 3115      13715                 13720                 13725
      3116 Asn Lys Thr Pro Ile Arg Met Arg Asp Phe Lys Val Thr Gly Leu Thr
E--> 3117      13730                 13735                 13740
      3118 Glu Gly Leu Glu Tyr Glu Phe Arg Val Met Ala Ile Asn Leu Ala Gly
E--> 3119 13745               13750                 13755               13760
      3120 Val Gly Lys Pro Ser Leu Pro Ser Glu Pro Val Val Ala Leu Asp Pro
E--> 3121           13765                 13770                 13775
      3122 Ile Asp Pro Pro Gly Lys Pro Glu Val Ile Asn Ile Thr Arg Asn Ser
E--> 3123           13780                 13785                 13790
      3124 Val Thr Leu Ile Trp Thr Glu Pro Lys Tyr Asp Gly Gly His Lys Leu
E--> 3125           13795                 13800                 13805
      3126 Thr Gly Tyr Ile Val Glu Lys Arg Asp Leu Pro Ser Lys Ser Trp Met
E--> 3127      13810                 13815                 13820
      3128 Lys Ala Asn His Val Asn Val Pro Glu Cys Ala Phe Thr Val Thr Asp
E--> 3129 13825               13830                 13835               13840
      3130 Leu Val Glu Gly Gly Lys Tyr Glu Phe Arg Ile Arg Ala Lys Asn Thr
E--> 3131           13845                 13850                 13855
      3132 Ala Gly Ala Ile Ser Ala Pro Ser Glu Ser Thr Glu Thr Ile Ile Cys
E--> 3133           13860                 13865                 13870
      3134 Lys Asp Glu Tyr Glu Ala Pro Thr Ile Val Leu Asp Pro Thr Ile Lys
E--> 3135           13875                 13880                 13885
      3136 Asp Gly Leu Thr Ile Lys Ala Gly Asp Thr Ile Val Leu Asn Ala Ile
E--> 3137      13890                 13895                 13900
      3138 Ser Ile Leu Gly Lys Pro Leu Pro Lys Ser Ser Trp Ser Lys Ala Gly
E--> 3139 13905               13910                 13915               13920
      3140 Lys Asp Ile Arg Pro Ser Asp Ile Thr Gln Ile Thr Ser Thr Pro Thr
E--> 3141           13925                 13930                 13935
      3142 Ser Ser Met Leu Thr Ile Lys Tyr Ala Thr Arg Lys Asp Ala Gly Glu
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E--> 3143                13940                    13945                    13950
     3144 Tyr Thr Ile Thr Ala Thr Asn Pro Phe Gly Thr Lys Val Glu His Val
E--> 3145          13955                    13960                    13965
     3146 Lys Val Thr Val Leu Asp Val Pro Gly Pro Pro Gly Pro Val Glu Ile
E--> 3147      13970                        13975                13980
     3148 Ser Asn Val Ser Ala Glu Lys Ala Thr Leu Thr Trp Thr Pro Pro Leu
E--> 3149 13985                    13990                13995                14000
     3150 Glu Asp Gly Gly Ser Pro Ile Lys Ser Tyr Ile Leu Glu Lys Arg Glu
E--> 3151              14005                    14010                    14015
     3152 Thr Ser Arg Leu Leu Trp Thr Val Val Ser Glu Asp Ile Gln Ser Cys
E--> 3153          14020                    14025                    14030
     3154 Arg His Val Ala Thr Lys Leu Ile Gln Gly Asn Glu Tyr Ile Phe Arg
E--> 3155          14035                    14040                    14045
     3156 Val Ser Ala Val Asn His Tyr Gly Lys Gly Glu Pro Val Gln Ser Glu
E--> 3157      14050                    14055                    14060
     3158 Pro Val Lys Met Val Asp Arg Phe Gly Pro Pro Gly Pro Pro Glu Lys
E--> 3159 14065                    14070                14075                14080
     3160 Pro Glu Val Ser Asn Val Thr Lys Asn Thr Ala Thr Val Ser Trp Lys
E--> 3161              14085                    14090                    14095
     3162 Arg Pro Val Asp Asp Gly Gly Ser Glu Ile Thr Gly Tyr His Val Glu
E--> 3163          14100                    14105                    14110
     3164 Arg Arg Glu Lys Lys Ser Leu Arg Trp Val Arg Ala Ile Lys Thr Pro
E--> 3165          14115                    14120                    14125
     3166 Val Ser Asp Leu Arg Cys Lys Val Thr Gly Leu Gln Glu Gly Ser Thr
E--> 3167      14130                    14135                    14140
     3168 Tyr Glu Phe Arg Val Ser Ala Glu Asn Arg Ala Gly Ile Gly Pro Pro
E--> 3169 14145                    14150                14155                14160
     3170 Ser Glu Ala Ser Asp Ser Val Leu Met Lys Asp Ala Ala Tyr Pro Pro
E--> 3171              14165                    14170                    14175
     3172 Gly Pro Pro Ser Asn Pro His Val Thr Asp Thr Thr Lys Lys Ser Ala
E--> 3173          14180                    14185                    14190
     3174 Ser Leu Ala Trp Gly Lys Pro His Tyr Asp Gly Gly Leu Glu Ile Thr
E--> 3175          14195                    14200                    14205
     3176 Gly Tyr Val Val Glu His Gln Lys Val Gly Asp Glu Ala Trp Ile Lys
E--> 3177      14210                    14215                    14220
     3178 Asp Thr Thr Gly Thr Ala Leu Arg Ile Thr Gln Phe Val Val Pro Asp
E--> 3179 14225                    14230                14235                14240
     3180 Leu Gln Thr Lys Glu Lys Tyr Asn Phe Arg Ile Ser Ala Ile Asn Asp
E--> 3181              14245                    14250                    14255
     3182 Ala Gly Val Gly Glu Pro Ala Val Ile Pro Asp Val Glu Ile Val Glu
E--> 3183          14260                    14265                    14270
     3184 Arg Glu Met Ala Pro Asp Phe Glu Leu Asp Ala Glu Leu Arg Arg Thr
E--> 3185          14275                    14280                    14285
     3186 Leu Val Val Arg Ala Gly Leu Ser Ile Arg Ile Phe Val Pro Ile Lys
E--> 3187      14290                    14295                    14300
     3188 Gly Arg Pro Ala Pro Glu Val Thr Trp Thr Lys Asp Asn Ile Asn Leu
E--> 3189 14305                    14310                14315                14320
     3190 Lys Asn Arg Ala Asn Ile Glu Asn Thr Glu Ser Phe Thr Leu Leu Ile
E--> 3191              14325                    14330                    14335
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      3192 Ile Pro Glu Cys Asn Arg Tyr Asp Thr Gly Lys Phe Val Met Thr Ile
E--> 3193           14340             14345             14350
      3194 Glu Asn Pro Ala Gly Lys Lys Ser Gly Phe Val Asn Val Arg Val Leu
E--> 3195           14355             14360             14365
      3196 Asp Thr Pro Gly Pro Val Leu Asn Leu Arg Pro Thr Asp Ile Thr Lys
E--> 3197      14370             14375             14380
      3198 Asp Ser Val Thr Leu His Trp Asp Leu Pro Leu Ile Asp Gly Gly Ser
E--> 3199 14385             14390             14395             14400
      3200 Arg Ile Thr Asn Tyr Ile Val Glu Lys Arg Glu Ala Thr Arg Lys Ser
E--> 3201           14405             14410             14415
      3202 Tyr Ser Thr Ala Thr Thr Lys Cys His Lys Cys Thr Tyr Lys Val Thr
E--> 3203           14420             14425             14430
      3204 Gly Leu Ser Glu Gly Cys Glu Tyr Phe Phe Arg Val Met Ala Glu Asn
E--> 3205           14435             14440             14445
      3206 Glu Tyr Gly Ile Gly Glu Pro Thr Glu Thr Glu Pro Val Lys Ala
E--> 3207           14450             14455             14460
      3208 Ser Glu Ala Pro Ser Pro Pro Asp Ser Leu Asn Ile Met Asp Ile Thr
E--> 3209 14465             14470             14475             14480
      3210 Lys Ser Thr Val Ser Leu Ala Trp Pro Lys Pro Lys His Asp Gly Gly
E--> 3211           14485             14490             14495
      3212 Ser Lys Ile Thr Gly Tyr Val Ile Glu Ala Gln Arg Lys Gly Ser Asp
E--> 3213           14500             14505             14510
      3214 Gln Trp Thr His Ile Thr Thr Val Lys Gly Leu Glu Cys Val Val Arg
E--> 3215           14515             14520             14525
      3216 Asn Leu Thr Glu Gly Glu Glu Tyr Thr Phe Gln Val Met Ala Val Asn
E--> 3217           14530             14535             14540
      3218 Ser Ala Gly Arg Ser Ala Pro Arg Glu Ser Arg Pro Val Ile Val Lys
E--> 3219 14545             14550             14555             14560
      3220 Glu Gln Thr Met Leu Pro Glu Leu Asp Leu Arg Gly Ile Tyr Gln Lys
E--> 3221           14565             14570             14575
      3222 Leu Val Ile Ala Lys Ala Gly Asp Asn Ile Lys Val Glu Ile Pro Val
E--> 3223           14580             14585             14590
      3224 Leu Gly Arg Pro Lys Pro Thr Val Thr Trp Lys Lys Gly Asp Gln Ile
E--> 3225           14595             14600             14605
      3226 Leu Lys Gln Thr Gln Arg Val Asn Phe Glu Thr Thr Ala Thr Ser Thr
E--> 3227      14610            14615             14620
      3228 Ile Leu Asn Ile Asn Glu Cys Val Arg Ser Asp Ser Gly Pro Tyr Pro
E--> 3229 14625             14630             14635             14640
      3230 Leu Thr Ala Arg Asn Ile Val Gly Glu Val Gly Asp Val Ile Thr Ile
E--> 3231           14645             14650             14655
      3232 Gln Val His Asp Ile Pro Gly Pro Pro Thr Gly Pro Ile Lys Phe Asp
E--> 3233           14660             14665             14670
      3234 Glu Val Ser Ser Asp Phe Val Thr Phe Ser Trp Asp Pro Pro Glu Asn
E--> 3235           14675             14680             14685
      3236 Asp Gly Gly Val Pro Ile Ser Asn Tyr Val Val Glu Met Arg Gln Thr
E--> 3237           14690             14695             14700
      3238 Asp Ser Thr Thr Trp Val Glu Leu Ala Thr Thr Val Ile Arg Thr Thr
E--> 3239 14705             14710             14715             14720
      3240 Tyr Lys Ala Thr Arg Leu Thr Thr Gly Leu Glu Tyr Gln Phe Arg Val
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E--> 3241  .              14725              14730              14735
     3242 Lys Ala Gln Asn Arg Tyr Gly Val Gly Pro Gly Ile Thr Ser Ala Trp
E--> 3243              14740              14745              14750
     3244 Ile Val Ala Asn Tyr Pro Phe Lys Val Pro Gly Pro Pro Gly Thr Pro
E--> 3245         14755              14760              14765
     3246 Gln Val Thr Ala Val Thr Lys Asp Ser Met Thr Ile Ser Trp His Glu
E--> 3247      14770              14775              14780
     3248 Pro Leu Ser Asp Gly Gly Ser Pro Ile Leu Gly Tyr His Val Glu Arg
E--> 3249 14785              14790              14795              14800
     3250 Lys Glu Arg Asn Gly Ile Leu Trp Gln Thr Val Ser Lys Ala Leu Val
E--> 3251         .      14805              14810              14815
     3252 Pro Gly Asn Ile Phe Lys Ser Ser Gly Leu Thr Asp Gly Ile Ala Tyr
E--> 3253              14820              14825              14830
     3254 Glu Phe Arg Val Ile Ala Glu Asn Met Ala Gly Lys Ser Lys Pro Ser
E--> 3255    .      14835              14840              14845
     3256 Lys Pro Ser Glu Pro Met Leu Ala Leu Asp Pro Ile Asp Pro Pro Gly
E--> 3257      14850              14855              14860
     3258 Lys Pro Val Pro Leu Asn Ile Thr Arg His Thr Val Thr Leu Lys Trp
E--> 3259 14865              14870              14875              14880
     3260 Ala Lys Pro Glu Tyr Thr Gly Gly Phe Lys Ile Thr Ser Tyr Ile Val
E--> 3261              14885              14890              14895
     3262 Glu Lys Arg Asp Leu Pro Asn Gly Arg Trp Leu Lys Ala Asn Phe Ser
E--> 3263              14900              14905              14910
     3264 Asn Ile Leu Glu Asn Glu Phe Thr Val Ser Gly Leu Thr Glu Asp Ala  .
E--> 3265         14915              14920              14925
     3266 Ala Tyr Glu Phe Arg Val Ile Ala Lys Asn Ala Ala Gly Ala Ile Ser
E--> 3267      14930              14935              14940
     3268 Pro Pro Ser Glu Pro Ser Asp Ala Ile Thr Cys Arg Asp Asp Val Glu
E--> 3269 14945              14950              14955              14960
     3270 Ala Pro Lys Ile Lys Val Asp Val Lys Phe Lys Asp Thr Val Ile Leu
E--> 3271              14965              14970              14975
     3272 Lys Ala Gly Glu Ala Phe Arg Leu Glu Ala Asp Val Ser Gly Arg Pro
E--> 3273              14980              14985              14990
     3274 Pro Pro Thr Met Glu Trp Ser Lys Asp Gly Lys Glu Leu Glu Gly Thr
E--> 3275         14995              15000              15005
     3276 Ala Lys Leu Glu Ile Lys Ile Ala Asp Phe Ser Thr Asn Leu Val Asn
E--> 3277      15010              15015              15020
     3278 Lys Asp Ser Thr Arg Arg Asp Ser Gly Ala Tyr Thr Leu Thr Ala Thr
E--> 3279 15025              15030              15035              15040
     3280 Asn Pro Gly Gly Phe Ala Lys His Ile Phe Asn Val Lys Val Leu Asp
E--> 3281              15045              15050              15055
     3282 Arg Pro Gly Pro Pro Glu Gly Pro Leu Ala Val Thr Glu Val Thr Ser
E--> 3283         15060              15065              15070
     3284 Glu Lys Cys Val Leu Ser Trp Phe Pro Pro Leu Asp Asp Gly Gly Ala
E--> 3285         15075              15080              15085
     3286 Lys Ile Asp His Tyr Ile Val Gln Lys Arg Glu Thr Ser Arg Leu Ala
E--> 3287      15090              15095              15100
     3288 Trp Thr Asn Val Ala Ser Glu Val Gln Val Thr Lys Leu Lys Val Thr  .
E--> 3289 15105              15110              15115              15120
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        3290 Lys Leu Leu Lys Gly Asn Glu Tyr Ile Phe Arg Val Met Ala Val Asn
E--> 3291           15125                 15130                 15135
        3292 Lys Tyr Gly Val Gly Glu Pro Leu Glu Ser Glu Pro Val Leu Ala Val
E--> 3293           15140                 15145                 15150
        3294 Asn Pro Tyr Gly Pro Pro Asp Pro Pro Lys Asn Pro Glu Val Thr Thr
E--> 3295           15155                 15160                 15165
        3296 Ile Thr Lys Asp Ser Met Val Val Cys Trp Gly His Pro Asp Ser Asp
E--> 3297      15170                 15175                 15180
        3298 Gly Gly Ser Glu Ile Ile Asn Tyr Ile Val Glu Arg Arg Asp Lys Ala
E--> 3299 15185                 15190                 15195                 15200
        3300 Gly Gln Arg Trp Ile Lys Cys Asn Lys Lys Thr Leu Thr Asp Leu Arg
E--> 3301           15205                 15210                 15215
        3302 Tyr Lys Val Ser Gly Leu Thr Glu Gly His Glu Tyr Glu Phe Arg Ile
E--> 3303           15220                 15225                 15230
        3304 Met Ala Glu Asn Ala Ala Gly Ile Ser Ala Pro Ser Pro Thr Ser Pro
E--> 3305           15235                 15240                 15245
        3306 Phe Tyr Lys Ala Cys Asp Thr Val Phe Lys Pro Gly Pro Pro Gly Asn
E--> 3307      15250                 15255                 15260
        3308 Pro Arg Val Leu Asp Thr Ser Arg Ser Ser Ile Ser Ile Ala Trp Asn
E--> 3309 15265                 15270                 15275                 15280
        3310 Lys Pro Ile Tyr Asp Gly Gly Ser Glu Ile Thr Gly Tyr Met Val Glu
E--> 3311           15285                 15290                 15295
        3312 Ile Ala Leu Pro Glu Glu Asp Glu Trp Gln Ile Val Thr Pro Pro Ala
E--> 3313      15300                 15305                 15310
        3314 Gly Leu Lys Ala Thr Ser Tyr Thr Ile Thr Gly Leu Thr Glu Asn Gln
E--> 3315           15315                 15320                 15325
        3316 Glu Tyr Lys Ile Arg Ile Tyr Ala Met Asn Ser Glu Gly Leu Gly Glu
E--> 3317      15330                 15335                 15340
        3318 Pro Ala Leu Val Pro Gly Thr Pro Lys Ala Glu Asp Arg Met Leu Pro
E--> 3319 15345                 15350                 15355                 15360
        3320 Pro Glu Ile Glu Leu Asp Ala Asp Leu Arg Lys Val Val Thr Ile Arg
E--> 3321           15365                 15370                 15375
        3322 Ala Cys Cys Thr Leu Arg Leu Phe Val Pro Ile Lys Gly Arg Pro Asp
E--> 3323           15380                 15385                 15390
        3324 Pro Glu Val Lys Trp Ala Arg Asp His Gly Glu Ser Leu Asp Lys Ala
E--> 3325           15395                 15400                 15405
        3326 Ser Ile Glu Ser Ala Ser Ser Tyr Thr Leu Leu Ile Val Gly Asn Val
E--> 3327      15410                 15415                 15420
        3328 Asn Arg Phe Asp Ser Gly Lys Tyr Ile Leu Thr Val Glu Asn Ser Ser
E--> 3329 15425                 15430                 15435                 15440
        3330 Gly Ser Lys Ser Ala Phe Val Asn Val Arg Val Leu Asp Thr Pro Gly
E--> 3331           15445                 15450                 15455
        3332 Pro Pro Gln Asp Leu Lys Val Lys Glu Val Thr Lys Thr Ser Val Thr
E--> 3333           15460                 15465                 15470
        3334 Leu Thr Trp Asp Pro Pro Leu Leu Asp Gly Gly Ser Lys Ile Lys Asn
E--> 3335           15475                 15480                 15485
        3336 Tyr Ile Val Glu Lys Arg Glu Ser Thr Arg Lys Ala Tyr Ser Thr Val
E--> 3337      15490                 15495                 15500
        3338 Ala Thr Asn Cys His Lys Thr Ser Trp Lys Val Asp Gln Leu Gln Glu
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E--> 3339 15505              15510              15515              15520
     3340 Gly Cys Ser Tyr Tyr Phe Arg Val Leu Ala Glu Asn Glu Tyr Gly Ile
E--> 3341              15525              15530              15535
     3342 Gly Leu Pro Ala Glu Thr Ala Glu Ser Val Lys Ala Ser Glu Arg Pro
E--> 3343              15540              15545              15550
     3344 Leu Pro Pro Gly Lys Ile Thr Leu Met Asp Val Thr Arg Asn Ser Val
E--> 3345              15555              15560              15565
     3346 Ser Leu Ser Trp Glu Lys Pro Glu His Asp Gly Gly Ser Arg Ile Leu
E--> 3347      15570              15575              15580
     3348 Gly Tyr Ile Val Glu Met Gln Thr Lys Gly Ser Asp Lys Trp Ala Thr
E--> 3349 15585              15590              15595              15600
     3350 Cys Ala Thr Val Lys Val Thr Glu Ala Thr Ile Thr Gly Leu Ile Gln
E--> 3351              15605              15610              15615
     3352 Gly Glu Glu Tyr Ser Phe Arg Val Ser Ala Gln Asn Glu Lys Gly Ile
E--> 3353              15620              15625              15630
     3354 Ser Asp Pro Arg Gln Leu Ser Val Pro Val Ile Ala Lys Asp Leu Val
E--> 3355              15635              15640              15645
     3356 Ile Pro Pro Ala Phe Lys Leu Leu Phe Asn Thr Phe Thr Val Leu Ala
E--> 3357      15650              15655              15660
     3358 Gly Glu Asp Leu Lys Val Asp Val Pro Phe Ile Gly Arg Pro Thr Pro
E--> 3359 15665              15670              15675              15680
     3360 Ala Val Thr Trp His Lys Asp Asn Val Pro Leu Lys Gln Thr Thr Arg
E--> 3361              15685              15690              15695
     3362 Val Asn Ala Glu Ser Thr Glu Asn Asn Ser Leu Leu Thr Ile Lys Asp
E--> 3363              15700              15705              15710
     3364 Ala Cys Arg Glu Asp Val Gly His Tyr Val Val Lys Leu Thr Asn Ser
E--> 3365      15715              15720              15725
     3366 Ala Gly Glu Ala Ile Glu Thr Leu Asn Val Ile Val Leu Asp Lys Pro
E--> 3367      15730              15735              15740
     3368 Gly Pro Pro Thr Gly Pro Val Lys Met Asp Glu Val Thr Ala Asp Ser
E--> 3369 15745              15750              15755              15760
     3370 Ile Thr Leu Ser Trp Gly Pro Pro Lys Tyr Asp Gly Gly Ser Ser Ile
E--> 3371              15765              15770              15775
     3372 Asn Asn Tyr Ile Val Glu Lys Arg Asp Thr Ser Thr Thr Thr Trp Gln
E--> 3373              15780              15785              15790
     3374 Ile Val Ser Ala Thr Val Ala Arg Thr Thr Ile Lys Ala Cys Arg Leu
E--> 3375      15795              15800              15805
     3376 Lys Thr Gly Cys Glu Tyr Gln Phe Arg Ile Ala Ala Glu Asn Arg Tyr
E--> 3377      15810              15815              15820
     3378 Gly Lys Ser Thr Tyr Leu Asn Ser Glu Pro Thr Val Ala Gln Tyr Pro
E--> 3379 15825              15830              15835              15840
     3380 Phe Lys Val Pro Gly Pro Pro Gly Thr Pro Val Val Thr Leu Ser Ser
E--> 3381              15845              15850              15855
     3382 Arg Asp Ser Met Glu Val Gln Trp Asn Glu Pro Ile Ser Asp Gly Gly
E--> 3383              15860              15865              15870
     3384 Ser Arg Val Ile Gly Tyr His Leu Glu Arg Lys Glu Arg Asn Ser Ile
E--> 3385      15875              15880              15885
     3386 Leu Trp Val Lys Leu Asn Lys Thr Pro Ile Pro Gln Thr Lys Phe Lys
E--> 3387      15890              15895              15900
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      3388 Thr Thr Gly Leu Glu Glu Gly Val Glu Tyr Glu Phe Arg Val Ser Ala
E--> 3389 15905           15910           15915           15920
      3390 Glu Asn Ile Val Gly Ile Gly Lys Pro Ser Lys Val Ser Glu Cys Tyr
E--> 3391           15925           15930           15935
      3392 Val Ala Arg Asp Pro Cys Asp Pro Pro Gly Arg Pro Glu Ala Ile Ile
E--> 3393           15940           15945           15950
      3394 Val Thr Arg Asn Ser Val Thr Leu Gln Trp Lys Lys Pro Thr Tyr Asp
E--> 3395           15955           15960           15965
      3396 Gly Gly Ser Lys Ile Thr Gly Tyr Ile Val Glu Lys Lys Glu Leu Pro
E--> 3397     15970           15975           15980
      3398 Glu Gly Arg Trp Met Lys Ala Ser Phe Thr Asn Ile Ile Asp Thr His
E--> 3399 15985           15990           15995           16000
      3400 Phe Glu Val Thr Gly Leu Val Glu Asp His Arg Tyr Glu Phe Arg Val
E--> 3401           16005           16010           16015
      3402 Ile Ala Arg Asn Ala Ala Gly Val Phe Ser Glu Pro Ser Glu Ser Thr
E--> 3403           16020           16025           16030
      3404 Gly Ala Ile Thr Ala Arg Asp Glu Val Asp Pro Pro Arg Ile Ser Met
E--> 3405           16035           16040           16045
      3406 Asp Pro Lys Tyr Lys Asp Thr Ile Val Val His Ala Gly Glu Ser Phe
E--> 3407     16050           16055           16060
      3408 Lys Val Asp Ala Asp Ile Tyr Gly Lys Pro Ile Pro Thr Ile Gln Trp
E--> 3409 16065           16070           16075           16080
      3410 Ile Lys Gly Asp Gln Glu Leu Ser Asn Thr Ala Arg Leu Glu Ile Lys
E--> 3411           16085           16090           16095
      3412 Ser Thr Asp Phe Ala Thr Ser Leu Ser Val Lys Asp Ala Val Arg Val
E--> 3413           16100           16105           16110
      3414 Asp Ser Gly Asn Tyr Ile Leu Lys Ala Lys Asn Val Ala Gly Glu Arg
E--> 3415           16115           16120           16125
      3416 Ser Val Thr Val Asn Val Lys Val Leu Asp Arg Pro Gly Pro Pro Glu
E--> 3417     16130           16135           16140
      3418 Gly Pro Val Val Ile Ser Gly Val Thr Ala Glu Lys Cys Thr Leu Ala
E--> 3419 16145           16150           16155           16160
      3420 Trp Lys Pro Pro Leu Gln Asp Gly Gly Ser Asp Ile Ile Asn Tyr Ile
E--> 3421           16165           16170           16175
      3422 Val Glu Arg Arg Glu Thr Ser Arg Leu Val Trp Thr Val Val Asp Ala
E--> 3423           16180           16185           16190
      3424 Asn Val Gln Thr Leu Ser Cys Lys Val Thr Lys Leu Leu Glu Gly Asn
E--> 3425           16195           16200           16205
      3426 Glu Tyr Thr Phe Arg Ile Met Ala Val Asn Lys Tyr Gly Val Gly Glu
E--> 3427     16210           16215           16220
      3428 Pro Leu Glu Ser Glu Pro Val Val Ala Lys Asn Pro Phe Val Val Pro
E--> 3429 16225           16230           16235           16240
      3430 Asp Ala Pro Lys Ala Pro Glu Val Thr Thr Val Thr Lys Asp Ser Met
E--> 3431           16245           16250           16255
      3432 Ile Val Val Trp Glu Arg Pro Ala Ser Asp Gly Gly Ser Glu Ile Leu
E--> 3433           16260           16265           16270
      3434 Gly Tyr Val Leu Glu Lys Arg Asp Lys Glu Gly Ile Arg Trp Thr Arg
E--> 3435           16275           16280           16285
      3436 Cys His Lys Arg Leu Ile Gly Glu Leu Arg Leu Arg Val Thr Gly Leu
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E--> 3437    16290         16295         16300
    3438 Ile Glu Asn His Asp Tyr Glu Phe Arg Val Ser Ala Glu Asn Ala Ala
E--> 3439 16305         16310         16315         16320
    3440 Gly Leu Ser Glu Pro Ser Pro Pro Ser Ala Tyr Gln Lys Ala Cys Asp
E--> 3441         16325         16330         16335
    3442 Pro Ile Tyr Lys Pro Gly Pro Pro Asn Asn Pro Lys Val Ile Asp Ile
E--> 3443         16340         16345         16350
    3444 Thr Arg Ser Ser Val Phe Leu Ser Trp Ser Lys Pro Ile Tyr Asp Gly
E--> 3445         16355         16360         16365
    3446 Gly Cys Glu Ile Gln Gly Tyr Ile Val Glu Lys Cys Asp Val Asn Val
E--> 3447         16370         16375         16380
    3448 Gly Glu Trp Thr Met Cys Thr Pro Pro Thr Gly Ile Asn Lys Thr Asn
E--> 3449 16385         16390         16395         16400
    3450 Ile Glu Val Glu Lys Leu Leu Glu Lys His Glu Tyr Asn Phe Arg Ile
E--> 3451         16405         16410         16415
    3452 Cys Ala Ile Asn Lys Ala Gly Val Gly Glu His Ala Asp Val Pro Gly
E--> 3453         16420         16425         16430
    3454 Pro Ile Ile Val Glu Glu Lys Leu Glu Ala Pro Asp Ile Asp Leu Asp
E--> 3455         16435         16440         16445
    3456 Leu Glu Leu Arg Lys Ile Ile Asn Ile Arg Ala Gly Gly Ser Leu Arg
E--> 3457         16450         16455         16460
    3458 Leu Phe Val Pro Ile Lys Gly Arg Pro Thr Pro Glu Val Lys Trp Gly
E--> 3459 16465         16470         16475         16480
    3460 Lys Val Asp Gly Glu Ile Arg Asp Ala Ala Ile Ile Asp Val Thr Ser
E--> 3461         16485         16490         16495
    3462 Ser Phe Thr Ser Leu Val Leu Asp Asn Val Asn Arg Tyr Asp Ser Gly
E--> 3463         16500         16505         16510
    3464 Lys Tyr Thr Leu Thr Leu Glu Asn Ser Ser Gly Thr Lys Ser Ala Phe
E--> 3465         16515         16520         16525
    3466 Val Thr Val Arg Val Leu Asp Thr Pro Ser Pro Val Asn Leu Lys
E--> 3467         16530         16535         16540
    3468 Val Thr Glu Ile Thr Lys Asp Ser Val Ser Ile Thr Trp Glu Pro Pro
E--> 3469 16545         16550         16555         16560
    3470 Leu Leu Asp Gly Gly Ser Lys Ile Lys Asn Tyr Ile Val Glu Lys Arg
E--> 3471         16565         16570         16575
    3472 Glu Ala Thr Arg Lys Ser Tyr Ala Ala Val Val Thr Asn Cys His Lys
E--> 3473         16580         16585         16590
    3474 Asn Ser Trp Lys Ile Asp Gln Leu Gln Glu Gly Cys Ser Tyr Tyr Phe
E--> 3475         16595         16600         16605
    3476 Arg Val Thr Ala Glu Asn Glu Tyr Gly Ile Gly Leu Pro Ala Gln Thr
E--> 3477         16610         16615         16620
    3478 Ala Asp Pro Ile Lys Val Ala Glu Val Pro Gln Pro Pro Gly Lys Ile
E--> 3479 16625         16630         16635         16640
    3480 Thr Val Asp Asp Val Thr Arg Asn Ser Val Ser Leu Ser Trp Thr Lys
E--> 3481         16645         16650         16655
    3482 Pro Glu His Asp Gly Gly Ser Lys Ile Ile Gln Tyr Ile Val Glu Met
E--> 3483         16660         16665         16670
    3484 Gln Ala Lys His Ser Glu Lys Trp Ser Glu Cys Ala Arg Val Lys Ser
E--> 3485         16675         16680         16685
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      3486 Leu Gln Ala Val Ile Thr Asn Leu Thr Gln Gly Glu Glu Tyr Leu Phe
E--> 3487      16690            16695            16700
      3488 Arg Val Val Ala Val Asn Glu Lys Gly Arg Ser Asp Pro Arg Ser Leu
E--> 3489 16705            16710            16715            16720
      3490 Ala Val Pro Ile Val Ala Lys Asp Leu Val Ile Glu Pro Asp Val Lys
E--> 3491           16725            16730            16735
      3492 Pro Ala Phe Ser Ser Tyr Ser Val Gln Val Gly Gln Asp Leu Lys Ile
E--> 3493           16740            16745            16750
      3494 Glu Val Pro Ile Ser Gly Arg Pro Lys Pro Thr Ile Thr Trp Thr Lys
E--> 3495           16755            16760            16765
      3496 Asp Gly Leu Pro Leu Lys Gln Thr Thr Arg Ile Asn Val Thr Asp Ser
E--> 3497           16770            16775            16780
      3498 Leu Asp Leu Thr Thr Leu Ser Ile Lys Glu Thr His Lys Asp Asp Gly
E--> 3499 16785            16790            16795            16800
      3500 Gly Gln Tyr Gly Ile Thr Val Ala Asn Val Val Gly Gln Lys Thr Ala
E--> 3501           16805            16810            16815
      3502 Ser Ile Glu Ile Val Thr Leu Asp Lys Pro Asp Pro Pro Lys Gly Pro
E--> 3503           16820            16825            16830
      3504 Val Lys Phe Asp Asp Val Ser Ala Glu Ser Ile Thr Leu Ser Trp Asn
E--> 3505           16835            16840            16845
      3506 Pro Pro Leu Tyr Thr Gly Gly Cys Gln Ile Thr Asn Tyr Ile Val Gln
E--> 3507           16850            16855            16860
      3508 Lys Arg Asp Thr Thr Thr Thr Val Trp Asp Val Val Ser Ala Thr Val
E--> 3509 16865            16870            16875            16880
      3510 Ala Arg Thr Thr Leu Lys Val Thr Lys Leu Lys Thr Gly Thr Glu Tyr
E--> 3511           16885            16890            16895
      3512 Gln Phe Arg Ile Phe Ala Glu Asn Arg Tyr Gly Gln Ser Phe Ala Leu
E--> 3513           16900            16905            16910
      3514 Glu Ser Asp Pro Ile Val Ala Gln Tyr Pro Tyr Lys Glu Pro Gly Pro
E--> 3515           16915            16920            16925
      3516 Pro Gly Thr Pro Phe Ala Thr Ala Ile Ser Lys Asp Ser Met Val Ile
E--> 3517           16930            16935            16940
      3518 Gln Trp His Glu Pro Val Asn Asn Gly Gly Ser Pro Val Ile Gly Tyr
E--> 3519 16945            16950            16955            16960
      3520 His Leu Glu Arg Lys Glu Arg Asn Ser Ile Leu Trp Thr Lys Val Asn
E--> 3521           16965            16970            16975
      3522 Lys Thr Ile Ile His Asp Thr Gln Phe Lys Ala Gln Asn Leu Glu Glu
E--> 3523           16980            16985            16990
      3524 Gly Ile Glu Tyr Glu Phe Arg Val Tyr Ala Glu Asn Ile Val Gly Val
E--> 3525           16995            17000            17005
      3526 Gly Lys Ala Ser Lys Asn Ser Glu Cys Tyr Val Ala Arg Asp Pro Cys
E--> 3527           17010            17015            17020
      3528 Asp Pro Pro Gly Thr Pro Glu Pro Ile Met Val Lys Arg Asn Glu Ile
E--> 3529 17025            17030            17035            17040
      3530 Thr Leu Gln Trp Thr Lys Pro Val Tyr Asp Gly Gly Ser Met Ile Thr
E--> 3531           17045            17050            17055
      3532 Gly Tyr Ile Val Glu Lys Arg Asp Leu Pro Asp Gly Arg Trp Met Lys
E--> 3533           17060            17065            17070
      3534 Ala Ser Phe Thr Asn Val Ile Glu Thr Gln Phe Thr Val Ser Gly Leu
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E--> 3535      17075          17080          17085
     3536 Thr Glu Asp Gln Arg Tyr Glu Phe Arg Val Ile Ala Lys Asn Ala Ala
E--> 3537      17090          17095          17100
     3538 Gly Ala Ile Ser Lys Pro Ser Asp Ser Thr Gly Pro Ile Thr Ala Lys
E--> 3539 17105          17110          17115          17120
     3540 Asp Glu Val Glu Leu Pro Arg Ile Ser Met Asp Pro Lys Phe Arg Asp
E--> 3541          17125          17130          17135
     3542 Thr Ile Val Val Asn Ala Gly Glu Thr Phe Arg Leu Glu Ala Asp Val
E--> 3543          17140          17145          17150
     3544 His Gly Lys Pro Leu Pro Thr Ile Glu Trp Leu Arg Gly Asp Lys Glu
E--> 3545          17155          17160          17165
     3546 Ile Glu Glu Ser Ala Arg Cys Glu Ile Lys Asn Thr Asp Phe Lys Ala
E--> 3547      17170          17175          17180
     3548 Leu Leu Ile Val Lys Asp Ala Ile Arg Ile Asp Gly Gly Gln Tyr Ile
E--> 3549 17185          17190          17195          17200
     3550 Leu Arg Ala Ser Asn Val Ala Gly Ser Lys Ser Phe Pro Val Asn Val
E--> 3551          17205          17210          17215
     3552 Lys Val Leu Asp Arg Pro Gly Pro Pro Glu Gly Pro Val Gln Val Thr
E--> 3553          17220          17225          17230
     3554 Gly Val Thr Ser Glu Lys Cys Ser Leu Thr Trp Ser Pro Pro Leu Gln
E--> 3555          17235          17240          17245
     3556 Asp Gly Gly Ser Asp Ile Ser His Tyr Val Val Glu Lys Arg Glu Thr
E--> 3557      17250          17255          17260
     3558 Ser Arg Leu Ala Trp Thr Val Val Ala Ser Glu Val Val Thr Asn Ser
E--> 3559 17265          17270          17275          17280
     3560 Leu Lys Val Thr Lys Leu Leu Glu Gly Asn Glu Tyr Val Phe Arg Ile
E--> 3561          17285          17290          17295
     3562 Met Ala Val Asn Lys Tyr Gly Val Gly Glu Pro Leu Glu Ser Ala Pro
E--> 3563          17300          17305          17310
     3564 Val Leu Met Lys Asn Pro Phe Val Leu Pro Gly Pro Pro Lys Ser Leu
E--> 3565          17315          17320          17325
     3566 Glu Val Thr Asn Ile Ala Lys Asp Ser Met Thr Val Cys Trp Asn Arg
E--> 3567      17330          17335          17340
     3568 Pro Asp Ser Asp Gly Gly Ser Glu Ile Ile Gly Tyr Ile Val Glu Lys
E--> 3569 17345          17350          17355          17360
     3570 Arg Asp Arg Ser Gly Ile Arg Trp Ile Lys Cys Asn Lys Arg Arg Ile
E--> 3571          17365          17370          17375
     3572 Thr Asp Leu Arg Leu Arg Val Thr Gly Leu Thr Glu Asp His Glu Tyr
E--> 3573          17380          17385          17390
     3574 Glu Phe Arg Val Ser Ala Glu Asn Ala Ala Gly Val Gly Glu Pro Ser
E--> 3575          17395          17400          17405
     3576 Pro Ala Thr Val Tyr Tyr Lys Ala Cys Asp Pro Val Phe Lys Pro Gly
E--> 3577      17410          17415          17420
     3578 Pro Pro Thr Asn Ala His Ile Val Asp Thr Thr Lys Asn Ser Ile Thr
E--> 3579 17425          17430          17435          17440
     3580 Leu Ala Trp Gly Lys Pro Ile Tyr Asp Gly Gly Ser Glu Ile Leu Gly
E--> 3581          17445          17450          17455
     3582 Tyr Val Val Glu Ile Cys Lys Ala Asp Glu Glu Glu Trp Gln Ile Val
E--> 3583          17460          17465          17470
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      3584 Thr Pro Gln Thr Gly Leu Arg Val Thr Arg Phe Glu Ile Ser Lys Leu
E--> 3585         17475               17480               17485
      3586 Thr Glu His Gln Glu Tyr Lys Ile Arg Val Cys Ala Leu Asn Lys Val
E--> 3587      17490               17495               17500
      3588 Gly Leu Gly Glu Ala Thr Ser Val Pro Gly Thr Val Lys Pro Glu Asp
E--> 3589 17505               17510               17515               17520
      3590 Lys Leu Glu Ala Pro Glu Leu Asp Leu Asp Ser Glu Leu Arg Lys Gly
E--> 3591              17525               17530               17535
      3592 Ile Val Val Arg Ala Gly Gly Ser Ala Arg Ile His Ile Pro Phe Lys
E--> 3593             17540               17545               17550
      3594 Gly Arg Pro Met Pro Glu Ile Thr Trp Ser Arg Glu Glu Gly Glu Phe
E--> 3595             17555               17560               17565
      3596 Thr Asp Lys Val Gln Ile Glu Lys Gly Val Asn Tyr Thr Gln Leu Ser
E--> 3597      17570               17575               17580
      3598 Ile Asp Asn Cys Asp Arg Asn Asp Ala Gly Lys Tyr Ile Leu Lys Leu
E--> 3599 17585               17590               17595               17600
      3600 Glu Asn Ser Ser Gly Ser Lys Ser Ala Phe Val Thr Val Lys Val Leu
E--> 3601             17605               17610               17615
      3602 Asp Thr Pro Gly Pro Pro Gln Asn Leu Ala Val Lys Glu Val Arg Lys
E--> 3603             17620               17625               17630
      3604 Asp Ser Ala Phe Leu Val Trp Glu Pro Pro Ile Ile Asp Gly Gly Ala
E--> 3605             17635               17640               17645
      3606 Lys Val Lys Asn Tyr Val Ile Asp Lys Arg Glu Ser Thr Arg Lys Ala
E--> 3607      17650               17655               17660
      3608 Tyr Ala Asn Val Ser Ser Lys Cys Ser Lys Thr Ser Phe Lys Val Glu
E--> 3609 17665               17670               17675               17680
      3610 Asn Leu Thr Glu Gly Ala Ile Tyr Tyr Phe Arg Val Met Ala Glu Asn
E--> 3611             17685               17690               17695
      3612 Glu Phe Gly Val Gly Val Pro Val Glu Thr Val Asp Ala Val Lys Ala
E--> 3613             17700               17705               17710
      3614 Ala Glu Pro Pro Ser Pro Pro Gly Lys Val Thr Leu Thr Asp Val Ser
E--> 3615             17715               17720               17725
      3616 Gln Thr Ser Ala Ser Leu Met Trp Glu Lys Pro Glu His Asp Gly Gly
E--> 3617      17730               17735               17740
      3618 Ser Arg Val Leu Gly Tyr Val Val Glu Met Gln Pro Lys Gly Thr Glu
E--> 3619 17745               17750               17755               17760
      3620 Lys Trp Ser Ile Val Ala Glu Ser Lys Val Cys Asn Ala Val Val Thr
E--> 3621             17765               17770               17775
      3622 Gly Leu Ser Ser Gly Gln Glu Tyr Gln Phe Arg Val Lys Ala Tyr Asn
E--> 3623             17780               17785               17790
      3624 Glu Lys Gly Lys Ser Asp Pro Arg Val Leu Gly Val Pro Val Ile Ala
E--> 3625             17795               17800               17805
      3626 Lys Asp Leu Thr Ile Gln Pro Ser Leu Lys Leu Pro Phe Asn Thr Tyr
E--> 3627      17810               17815               17820
      3628 Ser Ile Gln Ala Gly Glu Asp Leu Lys Ile Glu Ile Pro Val Ile Gly
E--> 3629 17825               17830               17835               17840
      3630 Arg Pro Arg Pro Asn Ile Ser Trp Val Lys Asp Gly Glu Pro Leu Lys
E--> 3631             17845               17850               17855
      3632 Gln Thr Thr Arg Val Asn Val Glu Glu Thr Ala Thr Ser Thr Val Leu
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E--> 3633          17860            17865              17870
     3634 His Ile Lys Glu Gly Asn Lys Asp Asp Phe Gly Lys Tyr Thr Val Thr
E--> 3635          17875            17880              17885
     3636 Ala Thr Asn Ser Ala Gly Thr Ala Thr Glu Asn Leu Ser Val Ile Val
E--> 3637     17890            17895            17900
     3638 Leu Glu Lys Pro Gly Pro Pro Val Gly Pro Val Arg Phe Asp Glu Val
E--> 3639 17905            17910            17915              17920
     3640 Ser Ala Asp Phe Val Val Ile Ser Trp Glu Pro Pro Ala Tyr Thr Gly
E--> 3641          17925            17930              17935
     3642 Gly Cys Gln Ile Ser Asn Tyr Ile Val Glu Lys Arg Asp Thr Thr Thr
E--> 3643          17940            17945              17950
     3644 Thr Thr Trp His Met Val Ser Ala Thr Val Ala Arg Thr Thr Ile Lys
E--> 3645          17955            17960              17965
     3646 Ile Thr Lys Leu Lys Thr Gly Thr Glu Tyr Gln Phe Arg Ile Phe Ala
E--> 3647     17970            17975            17980
     3648 Glu Asn Arg Tyr Gly Lys Ser Ala Pro Leu Asp Ser Lys Ala Val Ile
E--> 3649 17985            17990            17995              18000
     3650 Val Gln Tyr Pro Phe Lys Glu Pro Gly Pro Pro Gly Thr Pro Phe Val
E--> 3651          18005            18010              18015
     3652 Thr Ser Ile Ser Lys Asp Gln Met Leu Val Gln Trp His Glu Pro Val
E--> 3653          18020            18025              18030
     3654 Asn Asp Gly Gly Thr Lys Ile Ile Gly Tyr His Leu Glu Gln Lys Glu
E--> 3655          18035            18040              18045
     3656 Lys Asn Ser Ile Leu Trp Val Lys Leu Asn Lys Thr Pro Ile Gln Asp
E--> 3657     18050            18055            18060
     3658 Thr Lys Phe Lys Thr Thr Gly Leu Asp Glu Gly Leu Glu Tyr Glu Phe
E--> 3659 18065            18070            18075              18080
     3660 Lys Val Ser Ala Glu Asn Ile Val Gly Ile Gly Lys Pro Ser Lys Val
E--> 3661          18085            18090              18095
     3662 Ser Glu Cys Phe Val Ala Arg Asp Pro Cys Asp Pro Pro Gly Arg Pro
E--> 3663          18100            18105              18110
     3664 Glu Ala Ile Val Ile Thr Arg Asn Asn Val Thr Leu Lys Trp Lys Lys
E--> 3665     18115            18120            18125
     3666 Pro Ala Tyr Asp Gly Gly Ser Lys Ile Thr Gly Tyr Ile Val Glu Lys
E--> 3667     18130            18135            18140
     3668 Lys Asp Leu Pro Asp Gly Arg Trp Met Lys Ala Ser Phe Thr Asn Val
E--> 3669 18145            18150            18155              18160
     3670 Leu Glu Thr Glu Phe Thr Val Ser Gly Leu Val Glu Asp Gln Arg Tyr
E--> 3671          18165            18170              18175
     3672 Glu Phe Arg Val Ile Ala Arg Asn Ala Ala Gly Asn Phe Ser Glu Pro
E--> 3673          18180            18185              18190
     3674 Ser Asp Ser Ser Gly Ala Ile Thr Ala Arg Asp Glu Ile Asp Ala Pro
E--> 3675     18195            18200            18205
     3676 Asn Ala Ser Leu Asp Pro Lys Tyr Lys Asp Val Ile Val Val His Ala
E--> 3677     18210            18215            18220
     3678 Gly Glu Thr Phe Val Leu Glu Ala Asp Ile Arg Gly Lys Pro Ile Pro
E--> 3679 18225            18230            18235              18240
     3680 Asp Val Val Trp Ser Lys Asp Gly Lys Glu Leu Glu Glu Thr Ala Ala
E--> 3681          18245            18250              18255
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       3682 Arg Met Glu Ile Lys Ser Thr Ile Gln Lys Thr Thr Leu Val Val Lys
E--> 3683         18260             18265             18270
       3684 Asp Cys Ile Arg Thr Asp Gly Gly Gln Tyr Ile Leu Lys Leu Ser Asn
E--> 3685         18275             18280             18285
       3686 Val Gly Gly Thr Lys Ser Ile Pro Ile Thr Val Lys Val Leu Asp Arg
E--> 3687         18290             18295             18300
       3688 Pro Gly Ser Pro Glu Gly Pro Leu Lys Val Thr Gly Val Thr Ala Glu
E--> 3689 18305             18310             18315             18320
       3690 Lys Cys Tyr Leu Ala Trp Asn Pro Pro Leu Gln Asp Gly Gly Ala Asn
E--> 3691         18325             18330             18335
       3692 Ile Ser His Tyr Ile Ile Glu Lys Arg Glu Thr Ser Arg Leu Ser Trp
E--> 3693         18340             18345             18350
       3694 Thr Gln Val Ser Thr Glu Val Gln Ala Leu Asn Tyr Lys Val Thr Lys
E--> 3695         18355             18360             18365
       3696 Leu Leu Pro Gly Asn Glu Tyr Ile Phe Arg Val Met Ala Val Asn Lys
E--> 3697   18370             18375             18380
       3698 Tyr Gly Ile Gly Glu Pro Leu Glu Ser Gly Pro Val Thr Ala Cys Asn
E--> 3699 18385             18390             18395             18400
       3700 Pro Tyr Lys Pro Pro Gly Pro Pro Ser Thr Pro Glu Val Ser Ala Ile
E--> 3701         18405             18410             18415
       3702 Thr Lys Asp Ser Met Val Val Thr Trp Ala Arg Pro Val Asp Asp Gly
E--> 3703         18420             18425             18430
       3704 Gly Thr Glu Ile Glu Gly Tyr Ile Leu Glu Lys Arg Asp Lys Glu Gly
E--> 3705         18435             18440             18445
       3706 Val Arg Trp Thr Lys Cys Asn Lys Lys Thr Leu Thr Asp Leu Arg Leu
E--> 3707   18450             18455             18460
       3708 Arg Val Thr Gly Leu Thr Glu Gly His Ser Tyr Glu Phe Arg Val Ala
E--> 3709 18465             18470             18475             18480
       3710 Ala Glu Asn Ala Ala Gly Val Gly Glu Pro Ser Glu Pro Ser Val Phe
E--> 3711         18485             18490             18495
       3712 Tyr Arg Ala Cys Asp Ala Leu Tyr Pro Pro Gly Pro Pro Ser Asn Pro
E--> 3713         18500             18505             18510
       3714 Lys Val Thr Asp Thr Ser Arg Ser Ser Val Ser Leu Ala Trp Ser Lys
E--> 3715         18515             18520             18525
       3716 Pro Ile Tyr Asp Gly Gly Ala Pro Val Lys Gly Tyr Val Val Glu Val
E--> 3717   18530             18535             18540
       3718 Lys Glu Ala Ala Ala Asp Glu Trp Thr Thr Cys Thr Pro Pro Thr Gly
E--> 3719 18545             18550             18555             18560
       3720 Leu Gln Gly Lys Gln Phe Thr Val Thr Lys Leu Lys Glu Asn Thr Glu
E--> 3721         18565             18570             18575
       3722 Tyr Asn Phe Arg Ile Cys Ala Ile Asn Ser Glu Gly Val Gly Glu Pro
E--> 3723         18580             18585             18590
       3724 Ala Thr Leu Pro Gly Ser Val Val Ala Gln Glu Arg Ile Glu Pro Pro
E--> 3725         18595             18600             18605
       3726 Glu Ile Glu Leu Asp Ala Asp Leu Arg Lys Val Val Val Leu Arg Ala
E--> 3727   18610             18615             18620
       3728 Ser Ala Thr Leu Arg Leu Phe Val Thr Ile Lys Gly Arg Pro Glu Pro
E--> 3729 18625             18630             18635             18640
       3730 Glu Val Lys Trp Glu Lys Ala Glu Gly Ile Leu Thr Asp Arg Ala Gln
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E--> 3731            18645            18650            18655
     3732 Ile Glu Val Thr Ser Ser Phe Thr Met Leu Val Ile Asp Asn Val Thr
E--> 3733            18660            18665            18670
     3734 Arg Phe Asp Ser Gly Arg Tyr Asn Leu Thr Leu Glu Asn Asn Ser Gly
E--> 3735            18675            18680            18685
     3736 Ser Lys Thr Ala Phe Val Asn Val Arg Val Leu Asp Ser Pro Ser Ala
E--> 3737            18690            18695            18700
     3738 Pro Val Asn Leu Thr Ile Arg Glu Val Lys Lys Asp Ser Val Thr Leu
E--> 3739 18705            18710            18715            18720
     3740 Ser Trp Glu Pro Pro Leu Ile Asp Gly Gly Ala Lys Ile Thr Asn Tyr
E--> 3741            18725            18730            18735
     3742 Ile Val Glu Lys Arg Glu Thr Thr Arg Lys Ala Tyr Ala Thr Ile Thr
E--> 3743            18740            18745            18750
     3744 Asn Asn Cys Thr Lys Thr Thr Phe Arg Ile Glu Asn Leu Gln Glu Gly
E--> 3745            18755            18760            18765
     3746 Cys Ser Tyr Tyr Phe Arg Val Leu Ala Ser Asn Glu Tyr Gly Ile Gly
E--> 3747            18770            18775            18780
     3748 Leu Pro Ala Glu Thr Thr Glu Pro Val Lys Val Ser Glu Pro Pro Leu
E--> 3749 18785            18790            18795            18800
     3750 Pro Pro Gly Arg Val Thr Leu Val Asp Val Thr Arg Asn Thr Ala Thr
E--> 3751            18805            18810            18815
     3752 Ile Lys Trp Glu Lys Pro Glu Ser Asp Gly Gly Ser Lys Ile Thr Gly
E--> 3753            18820            18825            18830
     3754 Tyr Val Val Glu Met Gln Thr Lys Gly Ser Glu Lys Trp Ser Thr Cys
E--> 3755            18835            18840            18845
     3756 Thr Gln Val Lys Thr Leu Glu Ala Thr Ile Ser Gly Leu Thr Ala Gly
E--> 3757            18850            18855            18860
     3758 Glu Glu Tyr Val Phe Arg Val Ala Ala Val Asn Glu Lys Gly Arg Ser
E--> 3759 18865            18870            18875            18880
     3760 Asp Pro Arg Gln Leu Gly Val Pro Val Ile Ala Arg Asp Ile Glu Ile
E--> 3761            18885            18890            18895
     3762 Lys Pro Ser Val Glu Leu Pro Phe His Thr Phe Asn Val Lys Ala Arg
E--> 3763            18900            18905            18910
     3764 Glu Gln Leu Lys Ile Asp Val Pro Phe Lys Gly Arg Pro Gln Ala Thr
E--> 3765            18915            18920            18925
     3766 Val Asn Trp Arg Lys Asp Gly Gln Thr Leu Lys Glu Thr Thr Arg Val
E--> 3767            18930            18935            18940
     3768 Asn Val Ser Ser Ser Lys Thr Val Thr Ser Leu Ser Ile Lys Glu Ala
E--> 3769 18945            18950            18955            18960
     3770 Ser Lys Glu Asp Val Gly Thr Tyr Glu Leu Cys Val Ser Asn Ser Ala
E--> 3771            18965            18970            18975
     3772 Gly Ser Ile Thr Val Pro Ile Thr Ile Ile Val Leu Asp Arg Pro Gly
E--> 3773            18980            18985            18990
     3774 Pro Pro Gly Pro Ile Arg Ile Asp Glu Val Ser Cys Asp Ser Ile Thr
E--> 3775            18995            19000            19005
     3776 Ile Ser Trp Asn Pro Pro Glu Tyr Asp Gly Gly Cys Gln Ile Ser Asn
E--> 3777            19010            19015            19020
     3778 Tyr Ile Val Glu Lys Lys Glu Thr Thr Ser Thr Thr Trp His Ile Val
E--> 3779 19025            19030            19035            19040
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      3780 Ser Gln Ala Val Ala Arg Thr Ser Ile Lys Ile Val Arg Leu Thr Thr
E--> 3781             19045                 19050                 19055
      3782 Gly Ser Glu Tyr Gln Phe Arg Val Cys Ala Glu Asn Arg Tyr Gly Lys
E--> 3783             19060                 19065                 19070
      3784 Ser Ser Tyr Ser Glu Ser Ser Ala Val Val Ala Glu Tyr Pro Phe Ser
E--> 3785             19075                 19080                 19085
      3786 Pro Pro Gly Pro Pro Gly Thr Pro Lys Val Val His Ala Thr Lys Ser
E--> 3787       19090                 19095                 19100
      3788 Thr Met Leu Val Thr Trp Gln Val Pro Val Asn Asp Gly Gly Ser Arg
E--> 3789 19105                 19110                 19115                 19120
      3790 Val Ile Gly Tyr His Leu Glu Tyr Lys Glu Arg Ser Ser Ile Leu Trp
E--> 3791             19125                 19130                 19135
      3792 Ser Lys Ala Asn Lys Ile Leu Ile Ala Asp Thr Gln Val Lys Val Ser
E--> 3793             19140                 19145                 19150
      3794 Gly Leu Asp Glu Gly Leu Met Tyr Glu Tyr Arg Val Tyr Ala Glu Asn
E--> 3795             19155                 19160                 19165
      3796 Ile Ala Gly Ile Gly Lys Cys Ser Lys Ser Cys Glu Pro Val Pro Ala
E--> 3797       19170                 19175                 19180
      3798 Arg Asp Pro Cys Asp Pro Pro Gly Gln Pro Glu Val Thr Asn Ile Thr
E--> 3799 19185                 19190                 19195                 19200
      3800 Arg Lys Ser Val Ser Leu Lys Trp Ser Lys Pro His Tyr Asp Gly Gly
E--> 3801             19205                 19210                 19215
      3802 Ala Lys Ile Thr Gly Tyr Ile Val Glu Arg Arg Glu Leu Pro Asp Gly
E--> 3803             19220                 19225                 19230
      3804 Arg Trp Leu Lys Cys Asn Tyr Thr Asn Ile Gln Glu Thr Tyr Phe Glu
E--> 3805             19235                 19240                 19245
      3806 Val Thr Glu Leu Thr Glu Asp Gln Arg Tyr Glu Phe Arg Val Phe Ala
E--> 3807       19250                 19255                 19260
      3808 Arg Asn Ala Ala Asp Ser Val Ser Glu Pro Ser Glu Ser Thr Gly Pro
E--> 3809 19265                 19270                 19275                 19280
      3810 Ile Ile Val Lys Asp Asp Val Glu Pro Pro Arg Val Met Met Asp Val
E--> 3811             19285                 19290                 19295
      3812 Lys Phe Arg Asp Val Ile Val Val Lys Ala Gly Glu Val Leu Lys Ile
E--> 3813             19300                 19305                 19310
      3814 Asn Ala Asp Ile Ala Gly Arg Pro Leu Pro Val Ile Ser Trp Ala Lys
E--> 3815             19315                 19320                 19325
      3816 Asp Gly Ile Glu Ile Glu Glu Arg Ala Arg Thr Glu Ile Ile Ser Thr
E--> 3817             19330                 19335                 19340
      3818 Asp Asn His Thr Leu Leu Thr Val Lys Asp Cys Ile Arg Arg Asp Thr
E--> 3819 19345                 19350                 19355                 19360
      3820 Gly Gln Tyr Val Leu Thr Leu Lys Asn Val Ala Gly Thr Arg Ser Val
E--> 3821             19365                 19370                 19375
      3822 Ala Val Asn Cys Lys Val Leu Asp Lys Pro Gly Pro Pro Ala Gly Pro
E--> 3823             19380                 19385                 19390
      3824 Leu Glu Ile Asn Gly Leu Thr Ala Glu Lys Cys Ser Leu Ser Trp Gly
E--> 3825             19395                 19400                 19405
      3826 Arg Pro Gln Glu Asp Gly Gly Ala Asp Ile Asp Tyr Tyr His Arg Lys
E--> 3827       19410                 19415                 19420
      3828 Lys Arg Glu Thr Ser His Leu Ala Trp Thr Ile Cys Glu Gly Glu Leu
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E--> 3829 19425                19430                 19435                    19440
     3830 Gln Met Thr Ser Cys Lys Val Thr Lys Leu Leu Lys Gly Asn Glu Tyr
E--> 3831                19445                19450                     19455
     3832 Ile Phe Arg Val Thr Gly Val Asn Lys Tyr Gly Val Gly Glu Pro Leu
E--> 3833           19460                19465                   19470
     3834 Glu Ser Val Ala Ile Lys Ala Leu Asp Pro Phe Thr Val Pro Ser Pro
E--> 3835       19475                19480                   19485
     3836 Pro Thr Ser Leu Glu Ile Thr Ser Val Thr Lys Glu Ser Met Thr Leu
E--> 3837      19490                19495                19500
     3838 Cys Trp Ser Arg Pro Glu Ser Asp Gly Gly Ser Glu Ile Ser Gly Tyr
E--> 3839 19505                19510                19515                    19520
     3840 Ile Ile Glu Arg Arg Glu Lys Asn Ser Leu Arg Trp Val Arg Val Asn
E--> 3841                19525                19530                    19535
     3842 Lys Lys Pro Val Tyr Asp Leu Arg Val Lys Ser Thr Gly Leu Arg Glu
E--> 3843           19540                19545                   19550
     3844 Gly Cys Glu Tyr Glu Tyr Arg Val Tyr Ala Glu Asn Ala Ala Gly Leu
E--> 3845          19555                19560                   19565
     3846 Ser Leu Pro Ser Glu Thr Ser Pro Leu Ile Arg Ala Glu Asp Pro Val
E--> 3847       19570                19575                19580
     3848 Phe Leu Pro Ser Pro Pro Ser Lys Pro Lys Ile Val Asp Ser Gly Lys
E--> 3849 19585                19590                19595                    19600
     3850 Thr Thr Ile Thr Ile Ala Trp Val Lys Pro Leu Phe Asp Gly Gly Ala
E--> 3851                19605                19610                   19615
     3852 Pro Ile Thr Gly Tyr Thr Val Glu Tyr Lys Lys Ser Asp Asp Thr Asp
E--> 3853           19620                19625                   19630
     3854 Trp Lys Thr Ser Ile Gln Ser Leu Arg Gly Thr Glu Tyr Thr Ile Ser
E--> 3855       19635                19640                   19645
     3856 Gly Leu Thr Thr Gly Ala Glu Tyr Val Phe Arg Val Lys Ser Val Asn
E--> 3857      19650                19655                19660
     3858 Lys Val Gly Ala Ser Asp Pro Ser Asp Ser Ser Asp Pro Gln Ile Ala
E--> 3859 19665                19670                19675                    19680
     3860 Lys Glu Arg Glu Glu Glu Pro Leu Phe Asp Ile Asp Ser Glu Met Arg
E--> 3861                19685                19690                   19695
     3862 Lys Thr Leu Ile Val Lys Ala Gly Ala Ser Phe Thr Met Thr Val Pro
E--> 3863           19700                19705                   19710
     3864 Phe Arg Gly Arg Pro Val Pro Asn Val Leu Trp Ser Lys Pro Asp Thr
E--> 3865          19715                19720                   19725
     3866 Asp Leu Arg Thr Arg Ala Tyr Val Asp Thr Thr Asp Ser Arg Thr Ser
E--> 3867      19730                19735                19740
     3868 Leu Thr Ile Glu Asn Ala Asn Arg Asn Asp Ser Gly Lys Tyr Thr Leu
E--> 3869 19745                19750                19755                    19760
     3870 Thr Ile Gln Asn Val Leu Ser Ala Ala Ser Leu Thr Leu Val Val Lys
E--> 3871                19765                19770                    19775
     3872 Val Leu Asp Thr Pro Gly Pro Pro Thr Asn Ile Thr Val Gln Asp Val
E--> 3873           19780                19785                   19790
     3874 Thr Lys Glu Ser Ala Val Leu Ser Trp Asp Val Pro Glu Asn Asp Gly
E--> 3875       19795                19800                   19805
     3876 Gly Ala Pro Val Lys Asn Tyr His Ile Glu Lys Arg Glu Ala Ser Lys
E--> 3877      19810                19815                19820
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        3878 Lys Ala Trp Val Ser Val Thr Asn Asn Cys Asn Arg Leu Ser Tyr Lys
E--> 3879 19825              19830              19835              19840
        3880 Val Thr Asn Leu Gln Glu Gly Ala Ile Tyr Tyr Phe Arg Val Ser Gly
E--> 3881              19845              19850              19855
        3882 Glu Asn Glu Phe Gly Val Gly Ile Pro Ala Glu Thr Lys Glu Gly Val
E--> 3883              19860              19865              19870
        3884 Lys Ile Thr Glu Lys Pro Ser Pro Pro Glu Lys Leu Gly Val Thr Ser
E--> 3885              19875              19880              19885
        3886 Ile Ser Lys Asp Ser Val Ser Leu Thr Trp Leu Lys Pro Glu His Asp
E--> 3887              19890              19895              19900
        3888 Gly Gly Ser Arg Ile Val His Tyr Val Val Glu Ala Leu Glu Lys Gly
E--> 3889 19905              19910              19915              19920
        3890 Gln Lys Asn Trp Val Lys Cys Ala Val Ala Lys Ser Thr His His Val
E--> 3891              19925              19930              19935
        3892 Val Ser Gly Leu Arg Glu Asn Ser Glu Tyr Phe Phe Arg Val Phe Ala
E--> 3893              19940              19945              19950
        3894 Glu Asn Gln Ala Gly Leu Ser Asp Pro Arg Glu Leu Leu Leu Pro Val
E--> 3895              19955              19960              19965
        3896 Leu Ile Lys Glu Gln Leu Glu Pro Pro Glu Ile Asp Met Lys Asn Phe
E--> 3897              19970              19975              19980
        3898 Pro Ser His Thr Val Tyr Val Arg Ala Gly Ser Asn Leu Lys Val Asp
E--> 3899 19985              19990              19995              20000
        3900 Ile Pro Ile Ser Gly Lys Pro Leu Pro Lys Val Thr Leu Ser Arg Asp
E--> 3901              20005              20010              20015
        3902 Gly Val Pro Leu Lys Ala Thr Met Arg Phe Asn Thr Glu Ile Thr Ala
E--> 3903              20020              20025              20030
        3904 Glu Asn Leu Thr Ile Asn Leu Lys Glu Ser Val Thr Ala Asp Ala Gly
E--> 3905              20035              20040              20045
        3906 Arg Tyr Glu Ile Thr Ala Ala Asn Ser Ser Gly Thr Thr Lys Ala Phe
E--> 3907 20050              20055              20060
        3908 Ile Asn Ile Val Val Leu Asp Arg Pro Gly Pro Pro Thr Gly Pro Val
E--> 3909 20065              20070   ·          20075              20080
        3910 Val Ile Ser Asp Ile Thr Glu Glu Ser Val Thr Leu Lys Trp Glu Pro
E--> 3911              20085              20090              20095
        3912 Pro Lys Tyr Asp Gly Gly Ser Gln Val Thr Asn Tyr Ile Leu Leu Lys
E--> 3913              20100              20105              20110
        3914 Arg Glu Thr Ser Thr Ala Val Trp Thr Glu Val Ser Ala Thr Val Ala
E--> 3915              20115              20120              20125
        3916 Arg Thr Met Met Lys Val Met Lys Leu Thr Thr Gly Glu Glu Tyr Gln
E--> 3917              20130              20135              20140
        3918 Phe Arg Ile Lys Ala Glu Asn Arg Phe Gly Ile Ser Asp His Ile Asp
E--> 3919 20145              20150              20155              20160
        3920 Ser Ala Cys Val Thr Val Lys Leu Pro Tyr Thr Thr Pro Gly Pro Pro
E--> 3921              20165              20170              20175
        3922 Ser Thr Pro Trp Val Thr Asn Val Thr Arg Glu Ser Ile Thr Val Gly
E--> 3923              20180              20185              20190
        3924 Trp His Glu Pro Val Ser Asn Gly Gly Ser Ala Val Val Gly Tyr His
E--> 3925              20195              20200              20205
        3926 Leu Glu Met Lys Asp Arg Asn Ser Ile Leu Trp Gln Lys Ala Asn Lys
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E--> 3927      20210                20215                20220
     3928 Leu Val Ile Arg Thr Thr His Phe Lys Val Thr Thr Ile Ser Ala Gly
E--> 3929 20225                20230                20235                20240
     3930 Leu Ile Tyr Glu Phe Arg Val Tyr Ala Glu Asn Ala Ala Gly Val Gly
E--> 3931                20245                20250                20255
     3932 Lys Pro Ser His Pro Ser Glu Pro Val Leu Ala Ile Asp Ala Cys Glu
E--> 3933                20260                20265                20270
     3934 Pro Pro Arg Asn Val Arg Ile Thr Asp Ile Ser Lys Asn Ser Val Ser
E--> 3935           20275                20280                20285
     3936 Leu Ser Trp Gln Gln Pro Ala Phe Asp Gly Gly Ser Lys Ile Thr Gly
E--> 3937      20290                20295                20300
     3938 Tyr Ile Val Glu Arg Arg Asp Leu Pro Asp Gly Arg Trp Thr Lys Ala
E--> 3939 20305                20310                20315                20320
     3940 Ser Phe Thr Asn Val Thr Glu Thr Gln Phe Thr Ile Ser Gly Leu Thr
E--> 3941                20325                20330                20335
     3942 Gln Asn Ser Gln Tyr Glu Phe Arg Val Phe Ala Arg Asn Ala Val Gly
E--> 3943                20340                20345                20350
     3944 Ser Ile Ser Asn Pro Ser Glu Val Val Gly Pro Ile Thr Cys Ile Asp
E--> 3945           20355                20360                20365
     3946 Ser Tyr Gly Gly Pro Val Ile Asp Leu Pro Leu Glu Tyr Thr Glu Val
E--> 3947      20370                20375                20380
     3948 Val Lys Tyr Arg Ala Gly Thr Ser Val Lys Leu Arg Ala Gly Ile Ser
E--> 3949 20385                20390                20395                20400
     3950 Gly Lys Pro Ala Pro Thr Ile Glu Trp Tyr Lys Asp Asp Lys Glu Leu
E--> 3951                20405                20410                20415
     3952 Gln Thr Asn Ala Leu Val Cys Val Glu Asn Thr Thr Asp Leu Ala Ser
E--> 3953                20420                20425                20430
     3954 Ile Leu Ile Lys Asp Ala Asp Arg Leu Asn Ser Gly Cys Tyr Glu Leu
E--> 3955           20435                20440                20445
     3956 Lys Leu Arg Asn Ala Met Ala Ser Ala Ser Ala Thr Ile Arg Val Gln
E--> 3957      20450                20455                20460
     3958 Ile Leu Asp Lys Pro Gly Pro Pro Gly Gly Pro Ile Glu Phe Lys Thr
E--> 3959 20465                20470                20475                20480
     3960 Val Thr Ala Glu Lys Ile Thr Leu Leu Trp Arg Pro Pro Ala Asp Asp
E--> 3961                20485                20490                20495
     3962 Gly Gly Ala Lys Ile Thr His Tyr Ile Val Glu Lys Arg Glu Thr Ser
E--> 3963                20500                20505                20510
     3964 Arg Val Val Trp Ser Met Val Ser Glu His Leu Glu Glu Cys Ile Ile
E--> 3965           20515                20520                20525
     3966 Thr Thr Thr Lys Ile Ile Lys Gly Asn Glu Tyr Ile Phe Arg Val Arg
E--> 3967      20530                20535                20540
     3968 Ala Val Asn Lys Tyr Gly Ile Gly Glu Pro Leu Glu Ser Asp Ser Val
E--> 3969 20545                20550                20555                20560
     3970 Val Ala Lys Asn Ala Phe Val Thr Pro Gly Pro Pro Gly Ile Pro Glu
E--> 3971                20565                20570                20575
     3972 Val Thr Lys Ile Thr Lys Asn Ser Met Thr Val Val Trp Ser Arg Pro
E--> 3973           20580                20585                20590
     3974 Ile Ala Asp Gly Gly Ser Asp Ile Ser Gly Tyr Phe Leu Glu Lys Arg
E--> 3975           20595                20600                20605
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         3976 Asp Lys Lys Ser Leu Gly Trp Phe Lys Val Leu Lys Glu Thr Ile Arg
E--> 3977      20610                   20615                   20620
         3978 Asp Thr Arg Gln Lys Val Thr Gly Leu Thr Glu Asn Ser Asp Tyr Gln
E--> 3979 20625                   20630                   20635                   20640
         3980 Tyr Arg Val Cys Ala Val Asn Ala Ala Gly Gln Gly Pro Phe Ser Glu
E--> 3981                   20645                   20650                   20655
         3982 Pro Ser Glu Phe Tyr Lys Ala Ala Asp Pro Ile Asp Pro Pro Gly Pro
E--> 3983                   20660                   20665              20670
         3984 Pro Ala Lys Ile Arg Ile Ala Asp Ser Thr Lys Ser Ser Ile Thr Leu
E--> 3985              20675                   20680                   20685
         3986 Gly Trp Ser Lys Pro Val Tyr Asp Gly Gly Ser Ala Val Thr Gly Tyr
E--> 3987      20690                   20695                   20700
         3988 Val Val Glu Ile Arg Gln Gly Glu Glu Glu Glu Trp Thr Thr Val Ser
E--> 3989 20705                   20710                   20715                   20720
         3990 Thr Lys Gly Glu Val Arg Thr Thr Glu Tyr Val Val Ser Asn Leu Lys
E--> 3991                   20725                   20730                   20735
         3992 Pro Gly Val Asn Tyr Tyr Phe Arg Val Ser Ala Val Asn Cys Ala Gly
E--> 3993                   20740                   20745                   20750
         3994 Gln Gly Glu Pro Ile Glu Met Asn Glu Pro Val Gln Ala Lys Asp Ile
E--> 3995              20755                   20760                   20765
         3996 Leu Glu Ala Pro Glu Ile Asp Leu Asp Val Ala Leu Arg Thr Ser Val
E--> 3997      20770                   20775                   20780
         3998 Ile Ala Lys Ala Gly Glu Asp Val Gln Val Leu Ile Pro Phe Lys Gly
E--> 3999 20785                   20790                   20795                   20800
         4000 Arg Pro Pro Pro Thr Val Thr Trp Arg Lys Asp Glu Lys Asn Leu Gly
E--> 4001                   20805                   20810                   20815
         4002 Ser Asp Ala Arg Tyr Ser Ile Glu Asn Thr Asp Ser Ser Ser Leu Leu
E--> 4003                   20820                   20825                   20830
         4004 Thr Ile Pro Gln Val Thr Arg Asn Asp Thr Gly Lys Tyr Ile Leu Thr
E--> 4005              20835                   20840                   20845
         4006 Ile Glu Asn Gly Val Gly Glu Pro Lys Ser Ser Thr Val Ser Val Lys
E--> 4007      20850                   20855                   20860
         4008 Val Leu Asp Thr Pro Ala Ala Cys Gln Lys Leu Gln Val Lys His Val
E--> 4009 20865                   20870                   20875                   20880
         4010 Ser Arg Gly Thr Val Thr Leu Leu Trp Asp Pro Pro Leu Ile Asp Gly
E--> 4011                   20885                   20890                   20895
         4012 Gly Ser Pro Ile Ile Asn Tyr Val Ile Glu Lys Arg Asp Ala Thr Lys
E--> 4013                   20900                   20905                   20910
         4014 Arg Thr Trp Ser Val Val Ser His Lys Cys Ser Ser Thr Ser Phe Lys
E--> 4015              20915                   20920                   20925
         4016 Leu Ile Asp Leu Ser Glu Lys Thr Pro Phe Phe Phe Arg Val Leu Ala
E--> 4017      20930                   20935                   20940
         4018 Glu Asn Glu Ile Gly Ile Gly Glu Pro Cys Glu Thr Thr Glu Pro Val
E--> 4019 20945                   20950                   20955                   20960
         4020 Lys Ala Ala Glu Val Pro Ala Pro Ile Arg Asp Leu Ser Met Lys Asp
E--> 4021              20965                   20970                   20975
         4022 Ser Thr Lys Thr Ser Val Ile Leu Ser Trp Thr Lys Pro Asp Phe Asp
E--> 4023              20980                   20985                   20990
         4024 Gly Gly Ser Val Ile Thr Glu Tyr Val Val Glu Arg Lys Gly Lys Gly
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RAW SEQUENCE LISTING   DATE: 05/30/2001
PATENT APPLICATION: US/09/759,508A TIME: 11:49:02

Input Set : A:\00786.381002.SEQLIST.TXT
Output Set: C:\CRF3\05302001\I759508A.raw

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E--> 4025          20995              21000              21005
     4026 Glu Gln Thr Trp Ser His Ala Gly Ile Ser Lys Thr Cys Glu Ile Glu
E--> 4027      21010              21015              21020
     4028 Val Ser Gln Leu Lys Glu Gln Ser Val Leu Glu Phe Arg Val Phe Ala
E--> 4029 21025              21030              21035              21040
     4030 Lys Asn Glu Lys Gly Leu Ser Asp Pro Val Thr Ile Gly Pro Ile Thr
E--> 4031              21045              21050              21055
     4032 Val Lys Glu Leu Ile Ile Thr Pro Glu Val Asp Leu Ser Asp Ile Pro
E--> 4033              21060              21065              21070
     4034 Gly Ala Gln Val Thr Val Arg Ile Gly His Asn Val His Leu Glu Leu
E--> 4035          21075              21080              21085
     4036 Pro Tyr Lys Gly Lys Pro Lys Pro Ser Ile Ser Trp Leu Lys Asp Gly
E--> 4037      21090              21095              21100
     4038 Leu Pro Leu Lys Glu Ser Glu Phe Val Arg Phe Ser Lys Thr Glu Asn
E--> 4039 21105              21110              21115              21120
     4040 Lys Ile Thr Leu Ser Ile Lys Asn Ala Lys Lys Glu His Gly Gly Lys
E--> 4041              21125              21130              21135
     4042 Tyr Thr Val Ile Leu Asp Asn Ala Val Cys Arg Ile Ala Val Pro Ile
E--> 4043              21140              21145              21150
     4044 Thr Val Ile Thr Leu Gly Pro Pro Ser Lys Pro Lys Gly Pro Ile Arg
E--> 4045          21155              21160              21165
     4046 Phe Asp Glu Ile Lys Ala Asp Ser Val Ile Leu Ser Trp Asp Val Pro
E--> 4047      21170              21175              21180
     4048 Glu Asp Asn Gly Gly Gly Glu Ile Thr Cys Tyr Ser Ile Glu Lys Arg
E--> 4049 21185              21190              21195              21200
     4050 Glu Thr Ser Gln Thr Asn Trp Lys Met Val Cys Ser Ser Val Ala Arg
E--> 4051              21205              21210              21215
     4052 Thr Thr Phe Lys Val Pro Asn Leu Val Lys Asp Ala Glu Tyr Gln Phe
E--> 4053          21220              21225              21230
     4054 Arg Val Arg Ala Glu Asn Arg Tyr Gly Val Ser Gln Pro Leu Val Ser
E--> 4055          21235              21240              21245
     4056 Ser Ile Ile Val Ala Lys His Gln Phe Arg Ile Pro Gly Pro Pro Gly
E--> 4057      21250              21255              21260
     4058 Lys Pro Val Ile Tyr Asn Val Thr Ser Asp Gly Met Ser Leu Thr Trp
E--> 4059 21265              21270              21275              21280
     4060 Asp Ala Pro Val Tyr Asp Gly Gly Ser Glu Val Thr Gly Phe His Val
E--> 4061              21285              21290              21295
     4062 Glu Lys Lys Glu Arg Asn Ser Ile Leu Trp Gln Lys Val Asn Thr Ser
E--> 4063          21300              21305              21310
     4064 Pro Ile Ser Gly Arg Glu Tyr Arg Ala Thr Gly Leu Val Glu Gly Leu
E--> 4065      21315              21320              21325
     4066 Asp Tyr Gln Phe Arg Val Tyr Ala Glu Asn Ser Ala Gly Leu Ser Ser
E--> 4067      21330              21335              21340
     4068 Pro Ser Asp Pro Ser Lys Phe Thr Leu Ala Val Ser Pro Val Asp Pro
E--> 4069 21345              21350              21355              21360
     4070 Pro Gly Thr Pro Asp Tyr Ile Asp Val Thr Arg Glu Thr Ile Thr Leu
E--> 4071              21365              21370              21375
     4072 Lys Trp Asn Pro Pro Leu Arg Asp Gly Gly Ser Lys Ile Val Gly Tyr
E--> 4073          21380              21385              21390
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       4074 Ser Ile Glu Lys Arg Gln Gly Asn Glu Arg Trp Val Arg Cys Asn Phe
E--> 4075          21395              21400              21405
       4076 Thr Asp Val Ser Glu Cys Gln Tyr Thr Val Thr Gly Leu Ser Pro Gly
E--> 4077          21410              21415              21420
       4078 Asp Arg Tyr Glu Phe Arg Ile Ile Ala Arg Asn Ala Val Gly Thr Ile
E--> 4079 21425              21430              21435              21440
       4080 Ser Pro Pro Ser Gln Ser Ser Gly Ile Ile Met Thr Arg Asp Glu Asn
E--> 4081          21445              21450              21455
       4082 Val Pro Pro Ile Val Glu Phe Gly Pro Glu Tyr Phe Asp Gly Leu Ile
E--> 4083          21460              21465              21470
       4084 Ile Lys Ser Gly Glu Ser Leu Arg Ile Lys Ala Leu Val Gln Gly Arg
E--> 4085          21475              21480              21485
       4086 Pro Val Pro Arg Val Thr Trp Phe Lys Asp Gly Val Glu Ile Glu Lys
E--> 4087          21490              21495              21500
       4088 Arg Met Asn Met Glu Ile Thr Asn Val Leu Gly Ser Thr Ser Leu Phe
E--> 4089 21505              21510              21515              21520
       4090 Val Arg Asp Ala Thr Arg Asp His Arg Gly Val Tyr Thr Val Glu Ala
E--> 4091          21525              21530              21535
       4092 Lys Asn Ala Ser Gly Ser Ala Lys Ala Glu Ile Lys Val Lys Val Gln
E--> 4093          21540              21545              21550
       4094 Asp Thr Pro Gly Lys Val Val Gly Pro Ile Arg Phe Thr Asn Ile Thr
E--> 4095          21555              21560              21565
       4096 Gly Glu Lys Met Thr Leu Trp Trp Asp Ala Pro Leu Asn Asp Gly Cys
E--> 4097          21570              21575              21580
       4098 Ala Pro Ile Thr His Tyr Ile Ile Glu Lys Arg Glu Thr Ser Arg Leu
E--> 4099 21585              21590              21595              21600
       4100 Ala Trp Ala Leu Ile Glu Asp Lys Cys Glu Ala Gln Ser Tyr Thr Ala
E--> 4101          21605              21610              21615
       4102 Ile Lys Leu Ile Asn Gly Asn Glu Tyr Gln Phe Arg Val Ser Ala Val
E--> 4103          21620              21625              21630
       4104 Asn Lys Phe Gly Val Gly Arg Pro Leu Asp Ser Asp Pro Val Val Ala
E--> 4105          21635              21640              21645
       4106 Gln Ile Gln Tyr Thr Val Pro Asp Ala Pro Gly Ile Pro Glu Pro Ser
E--> 4107          21650              21655              21660
       4108 Asn Ile Thr Gly Asn Ser Ile Thr Leu Thr Trp Ala Arg Pro Glu Ser
E--> 4109 21665              21670              21675              21680
       4110 Asp Gly Gly Ser Glu Ile Gln Gln Tyr Ile Leu Glu Arg Arg Glu Lys
E--> 4111          21685              21690              21695
       4112 Lys Ser Thr Arg Trp Val Lys Val Ile Ser Lys Arg Pro Ile Ser Glu
E--> 4113          21700              21705              21710
       4114 Thr Arg Phe Lys Val Thr Gly Leu Thr Glu Gly Asn Glu Tyr Glu Phe
E--> 4115          21715              21720              21725
       4116 His Val Met Ala Glu Asn Ala Ala Gly Val Gly Pro Ala Ser Gly Ile
E--> 4117          21730              21735              21740
       4118 Ser Arg Leu Ile Lys Cys Arg Glu Pro Val Asn Pro Pro Gly Pro Pro
E--> 4119 21745              21750              21755              21760
       4120 Thr Val Val Lys Val Thr Asp Thr Ser Lys Thr Thr Val Ser Leu Glu
E--> 4121          21765              21770              21775
       4122 Trp Ser Lys Pro Val Phe Asp Gly Gly Met Glu Ile Ile Gly Tyr Ile
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E--> 4123            21780            21785            21790
     4124 Ile Glu Met Cys Lys Thr Asp Leu Gly Asp Trp His Lys Val Asn Ala
E--> 4125            21795            21800            21805
     4126 Glu Ala Cys Val Lys Thr Arg Tyr Thr Val Thr Asp Leu Gln Ala Gly
E--> 4127      21810            21815            21820
     4128 Glu Glu Tyr Lys Phe Arg Val Ser Ala Ile Asn Gly Ala Gly Lys Gly
E--> 4129 21825            21830            21835            21840
     4130 Asp Ser Cys Glu Val Thr Gly Thr Ile Lys Ala Val Asp Arg Leu Thr
E--> 4131            21845            21850            21855
     4132 Ala Pro Glu Leu Asp Ile Asp Ala Asn Phe Lys Gln Thr His Val Val
E--> 4133            21860            21865            21870
     4134 Arg Ala Gly Ala Ser Ile Arg Leu Phe Ile Ala Tyr Gln Gly Arg Pro
E--> 4135      21875            21880            21885
     4136 Thr Pro Thr Ala Val Trp Ser Lys Pro Asp Ser Asn Leu Ser Leu Arg
E--> 4137      21890            21895            21900
     4138 Ala Asp Ile His Thr Thr Asp Ser Phe Ser Thr Leu Thr Val Glu Asn
E--> 4139 21905            21910            21915            21920
     4140 Cys Asn Arg Asn Asp Ala Gly Lys Tyr Thr Leu Thr Val Glu Asn Asn
E--> 4141            21925            21930            21935
     4142 Ser Gly Ser Lys Ser Ile Thr Phe Thr Val Lys Val Leu Asp Thr Pro
E--> 4143            21940            21945            21950
     4144 Gly Pro Pro Gly Pro Ile Thr Phe Lys Asp Val Thr Arg Gly Ser Ala
E--> 4145      21955            21960            21965
     4146 Thr Leu Met Trp Asp Ala Pro Leu Leu Asp Gly Gly Ala Arg Ile His
E--> 4147      21970            21975            21980
     4148 His Tyr Val Val Glu Lys Arg Glu Ala Ser Arg Arg Ser Trp Gln Val
E--> 4149 21985            21990            21995            22000
     4150 Ile Ser Glu Lys Cys Thr Arg Gln Ile Phe Lys Val Asn Asp Leu Ala
E--> 4151            22005            22010.           22015
     4152 Glu Gly Val Pro Tyr Tyr Phe Arg Val Ser Ala Val Asn Glu Tyr Gly
E--> 4153            22020            22025            22030
     4154 Val Gly Glu Pro Tyr Glu Met Pro Glu Pro Ile Val Ala Thr Glu Gln
E--> 4155      22035            22040            22045
     4156 Pro Ala Pro. Pro Arg Arg Leu Asp Val Val Asp Thr Ser Lys Ser Ser
E--> 4157      22050            22055            22060
     4158 Ala Val Leu Ala Trp Leu Lys Pro Asp His Asp Gly Gly Ser Arg Ile
E--> 4159 22065            22070            22075            22080
     4160 Thr Gly Tyr Leu Leu Glu Met Arg Gln Lys Gly Ser Asp Leu Trp Val
E--> 4161      22085            22090            22095
     4162 Glu Ala Gly His Thr Lys Gln Leu Thr Phe Thr Val Glu Arg Leu Val
E--> 4163      22100            22105            22110
     4164 Glu Lys Thr Glu Tyr Glu Phe Arg Val Lys Ala Lys Asn Asp Ala Gly
E--> 4165      22115            22120            22125
     4166 Tyr Ser Glu Pro Arg Glu Ala Phe Ser Ser Val Ile Ile Lys Glu Pro
E--> 4167      22130            22135            22140
     4168 Gln Ile Glu Pro Thr Ala Asp Leu Thr Gly Ile Thr Asn Gln Leu Ile
E--> 4169 22145            22150            22155            22160
     4170 Thr Cys Lys Ala Gly Ser Pro Phe Thr Ile Asp Val Pro Ile Ser Gly
E--> 4171      22165            22170            22175
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       4172 Arg Pro Ala Pro Lys Val Thr Trp Lys Leu Glu Glu Met Arg Leu Lys
E--> 4173          22180           22185           22190
       4174 Glu Thr Asp Arg Val Ser Ile Thr Thr Thr Lys Asp Arg Thr Thr Leu
E--> 4175          22195           22200           22205
       4176 Thr Val Lys Asp Ser Met Arg Gly Asp Ser Gly Arg Tyr Phe Leu Thr
E--> 4177     22210           22215           22220
       4178 Leu Glu Asn Thr Ala Gly Val Lys Thr Phe Ser Val Thr Val Val Val
E--> 4179 22225           22230          22235              22240
       4180 Ile Gly Arg Pro Gly Pro Val Thr Gly Pro Ile Glu Val Ser Ser Val
E--> 4181          22245           22250           22255
       4182 Ser Ala Glu Ser Cys Val Leu Ser Trp Gly Glu Pro Lys Asp Gly Gly
E--> 4183          22260           22265           22270
       4184 Gly Thr Glu Ile Thr Asn Tyr Ile Val Glu Lys Arg Glu Ser Gly Thr
E--> 4185     22275           22280           22285
       4186 Thr Ala Trp Gln Leu Val Asn Ser Ser Val Lys Arg Thr Gln Ile Lys
E--> 4187     22290           22295           22300
       4188 Val Thr His Leu Thr Lys Tyr Met Glu Tyr Ser Phe Arg Val Ser Ser
E--> 4189 22305           22310           22315              22320
       4190 Glu Asn Arg Phe Gly Val Ser Lys Pro Leu Glu Ser Ala Pro Ile Ile
E--> 4191          22325           22330           22335
       4192 Ala Glu His Pro Phe Val Pro Pro Ser Ala Pro Thr Arg Pro Glu Val
E--> 4193          22340           22345           22350
       4194 Tyr His Val Ser Ala Asn Ala Met Ser Ile Arg Trp Glu Glu Pro Tyr
E--> 4195     22355           22360           22365
       4196 His Asp Gly Gly Ser Lys Ile Ile Gly Tyr Trp Val Glu Lys Lys Glu
E--> 4197     22370           22375           22380
       4198 Arg Asn Thr Ile Leu Trp Val Lys Glu Asn Lys Val Pro Cys Leu Glu
E--> 4199 22385           22390           22395              22400
       4200 Cys Asn Tyr Lys Val Thr Gly Leu Val Glu Gly Leu Glu Tyr Gln Phe
E--> 4201          22405           22410           22415
       4202 Arg Thr Tyr Ala Leu Asn Ala Ala Gly Val Ser Lys Ala Ser Glu Ala
E--> 4203          22420           22425           22430
       4204 Ser Arg Pro Ile Met Ala Gln Asn Pro Val Asp Ala Pro Gly Arg Pro
E--> 4205     22435           22440           22445
       4206 Glu Val Thr Asp Val Thr Arg Ser Thr Val Ser Leu Ile Trp Ser Ala
E--> 4207     22450           22455           22460
       4208 Pro Ala Tyr Asp Gly Gly Ser Lys Val Val Gly Tyr Ile Ile Glu Arg
E--> 4209 22465           22470           22475              22480
       4210 Lys Pro Val Ser Glu Val Gly Asp Gly Arg Trp Leu Lys Cys Asn Tyr
E--> 4211          22485           22490           22495
       4212 Thr Ile Val Ser Asp Asn Phe Phe Thr Val Thr Ala Leu Ser Glu Gly
E--> 4213          22500           22505           22510
       4214 Asp Thr Tyr Glu Phe Arg Val Leu Ala Lys Asn Ala Ala Gly Val Ile
E--> 4215     22515           22520           22525
       4216 Ser Lys Gly Ser Glu Ser Thr Gly Pro Val Thr Cys Arg Asp Glu Tyr
E--> 4217     22530           22535           22540
       4218 Ala Pro Pro Lys Ala Glu Leu Asp Ala Arg Leu His Gly Asp Leu Val
E--> 4219 22545           22550           22555              22560
       4220 Thr Ile Arg Ala Gly Ser Asp Leu Val Leu Asp Ala Ala Val Gly Gly
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E--> 4221            22565           22570           22575
     4222 Lys Pro Glu Pro Lys Ile Ile Trp Thr Lys Gly Asp Lys Glu Leu Asp
E--> 4223            22580           22585           22590
     4224 Leu Cys Glu Lys Val Ser Leu Gln Tyr Thr Gly Lys Arg Ala Thr Ala
E--> 4225         22595           22600           22605
     4226 Val Ile Lys Phe Cys Asp Arg Ser Asp Ser Gly Lys Tyr Thr Leu Thr
E--> 4227      22610           22615           22620
     4228 Val Lys Asn Ala Ser Gly Thr Lys Ala Val Ser Val Met Val Lys Val
E--> 4229 22625           22630           22635           22640
     4230 Leu Asp Ser Pro Gly Pro Cys Gly Lys Leu Thr Val Ser Arg Val Thr
E--> 4231            22645           22650           22655
     4232 Gln Glu Lys Cys Thr Leu Ala Trp Ser Leu Pro Gln Glu Asp Gly Gly
E--> 4233            22660           22665           22670
     4234 Ala Glu Ile Thr His Tyr Ile Val Glu Arg Arg Glu Thr Ser Arg Leu
E--> 4235         22675           22680           22685
     4236 Asn Trp Val Ile Val Glu Gly Glu Cys Pro Thr Leu Ser Tyr Val Val
E--> 4237      22690           22695           22700
     4238 Thr Arg Leu Ile Lys Asn Asn Glu Tyr Ile Phe Arg Val Arg Ala Val
E--> 4239 22705           22710           22715           22720
     4240 Asn Lys Tyr Gly Pro Gly Val Pro Val Glu Ser Glu Pro Ile Val Ala
E--> 4241            22725           22730           22735
     4242 Arg Asn Ser Phe Thr Ile Pro Ser Pro Pro Gly Ile Pro Glu Glu Val
E--> 4243         22740           22745           22750
     4244 Gly Thr Gly Lys Glu His Ile Ile Ile Gln Trp Thr Lys Pro Glu Ser
E--> 4245         22755           22760           22765
     4246 Asp Gly Gly Asn Glu Ile Ser Asn Tyr Leu Val Asp Lys Arg Glu Lys
E--> 4247      22770           22775           22780
     4248 Glu Ser Leu Arg Trp Thr Arg Val Asn Lys Asp Tyr Val Val Tyr Asp
E--> 4249 22785           22790           22795           22800
     4250 Thr Arg Leu Lys Val Thr Ser Leu Met Glu Gly Cys Asp Tyr Gln Phe
E--> 4251            22805           22810           22815
     4252 Arg Val Thr Ala Val Asn Ala Ala Gly Asn Ser Glu Pro Ser Glu Arg
E--> 4253         22820           22825           22830
     4254 Ser Asn Phe Ile Ser Cys Arg Glu Pro Ser Tyr Thr Pro Gly Pro Pro
E--> 4255         22835           22840           22845
     4256 Ser Ala Pro Arg Val Val Asp Thr Thr Lys His Ser Ile Ser Leu Ala
E--> 4257      22850           22855           22860
     4258 Trp Thr Lys Pro Met Tyr Asp Gly Gly Thr Asp Ile Val Gly Tyr Val
E--> 4259 22865           22870           22875           22880
     4260 Leu Glu Met Gln Glu Lys Asp Thr Asp Gln Trp Tyr Arg Val His Thr
E--> 4261         22885           22890           22895
     4262 Asn Ala Thr Ile Arg Asn Thr Glu Phe Thr Val Pro Asp Leu Lys Met
E--> 4263      22900           22905           22910
     4264 Gly Gln Lys Tyr Ser Phe Arg Val Ala Ala Val Asn Val Lys Gly Met
E--> 4265         22915           22920           22925
     4266 Ser Glu Tyr Ser Glu Ser Ile Ala Glu Ile Glu Pro Val Glu Arg Ile
E--> 4267      22930           22935           22940
     4268 Glu Ile Pro Asp Leu Glu Leu Ala Asp Asp Leu Lys Lys Thr Val Thr
E--> 4269 22945           22950           22955           22960
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      4270 Ile Arg Ala Gly Ala Ser Leu Arg Leu Met Val Ser Val Ser Gly Arg
E--> 4271            22965              22970              22975
      4272 Pro Pro Pro Val Ile Thr Trp Ser Lys Gln Gly Ile Asp Leu Ala Ser
E--> 4273            22980              22985              22990
      4274 Arg Ala Ile Ile Asp Thr Thr Glu Ser Tyr Ser Leu Leu Ile Val Asp
E--> 4275            22995              23000              23005
      4276 Lys Val Asn Arg Tyr Asp Ala Gly Lys Tyr Thr Ile Glu Ala Glu Asn
E--> 4277       23010              23015              23020
      4278 Gln Ser Gly Lys Lys Ser Ala Thr Val Leu Val Lys Val Tyr Asp Thr
E--> 4279 23025              23030              23035              23040
      4280 Pro Gly Pro Cys Pro Ser Val Lys Val Lys Glu Val Ser Arg Asp Ser
E--> 4281            23045              23050              23055
      4282 Val Thr Ile Thr Trp Glu Ile Pro Thr Ile Asp Gly Gly Ala Pro Ile
E--> 4283            23060              23065              23070
      4284 Asn Asn Tyr Ile Val Glu Lys Arg Glu Ala Ala Met Arg Ala Phe Lys
E--> 4285            23075              23080              23085
      4286 Thr Val Thr Thr Lys Cys Ser Lys Thr Leu Tyr Arg Ile Ser Gly Leu
E--> 4287            23090              23095              23100
      4288 Val Glu Gly Thr Met His Tyr Phe Arg Val Leu Pro Glu Asn Ile Tyr
E--> 4289 23105              23110              23115              23120
      4290 Gly Ile Gly Glu Pro Cys Glu Thr Ser Asp Ala Val Leu Val Ser Glu
E--> 4291            23125              23130              23135
      4292 Val Pro Leu Val Pro Ala Lys Leu Glu Val Val Asp Val Thr Lys Ser
E--> 4293            23140              23145              23150
      4294 Thr Val Thr Leu Ala Trp Glu Lys Pro Leu Tyr Asp Gly Gly Ser Arg
E--> 4295       23155              23160              23165
      4296 Leu Thr Gly Tyr Val Leu Glu Ala Cys Lys Ala Gly Thr Glu Arg Trp
E--> 4297 23170              23175              23180
      4298 Met Lys Val Val Thr Leu Lys Pro Thr Val Leu Glu His Thr Val Thr
E--> 4299 23185              23190              23195              23200
      4300 Ser Leu Asn Glu Gly Glu Gln Tyr Leu Phe Arg Ile Arg Ala Gln Asn
E--> 4301            23205              23210              23215
      4302 Glu Lys Gly Val Ser Glu Pro Arg Glu Thr Val Thr Ala Val Thr Val
E--> 4303            23220              23225              23230
      4304 Gln Asp Leu Arg Val Leu Pro Thr Ile Asp Leu Ser Thr Met Pro Gln
E--> 4305            23235              23240              23245
      4306 Lys Thr Ile His Val Pro Ala Gly Arg Pro Val Glu Leu Val Ile Pro
E--> 4307       23250              23255              23260
      4308 Ile Ala Gly Arg Pro Pro Pro Ala Ala Ser Trp Phe Phe Ala Gly Ser
E--> 4309 23265              23270              23275              23280
      4310 Lys Leu Arg Glu Ser Glu Arg Val Thr Val Glu Thr His Thr Lys Val
E--> 4311       23285              23290              23295
      4312 Ala Lys Leu Thr Ile Arg Glu Thr Thr Ile Arg Asp Thr Gly Glu Tyr
E--> 4313            23300              23305              23310
      4314 Thr Leu Glu Leu Lys Asn Val Thr Gly Thr Thr Ser Glu Thr Ile Lys
E--> 4315       23315              23320              23325
      4316 Val Ile Ile Leu Asp Lys Pro Gly Pro Pro Thr Gly Pro Ile Lys Ile
E--> 4317       23330              23335              23340
      4318 Asp Glu Ile Asp Ala Thr Ser Ile Thr Ile Ser Trp Glu Pro Pro Glu
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E--> 4319 23345           23350           23355           23360
     4320 Leu Asp Gly Gly Ala Pro Leu Ser Gly Tyr Val Val Glu Gln Arg Asp
E--> 4321           23365           23370           23375
     4322 Ala His Arg Pro Gly Trp Leu Pro Val Ser Glu Ser Val Thr Arg Ser
E--> 4323           23380           23385           23390
     4324 Thr Phe Lys Phe Thr Arg Leu Thr Glu Gly Asn Glu Tyr Val Phe Arg
E--> 4325           23395           23400           23405
     4326 Val Ala Ala Thr Asn Arg Phe Gly Ile Gly Ser Tyr Leu Gln Ser Glu
E--> 4327      23410           23415           23420
     4328 Val Ile Glu Cys Arg Ser Ser Ile Arg Ile Pro Gly Pro Pro Glu Thr
E--> 4329 23425           23430           23435           23440
     4330 Leu Gln Ile Phe Asp Val Ser Arg Asp Gly Met Thr Leu Thr Trp Tyr
E--> 4331           23445           23450           23455
     4332 Pro Pro Glu Asp Asp Gly Gly Ser Gln Val Thr Gly Tyr Ile Val Glu
E--> 4333           23460           23465           23470
     4334 Arg Lys Glu Val Arg Ala Asp Arg Trp Val Arg Val Asn Lys Val Pro
E--> 4335           23475           23480           23485
     4336 Val Thr Met Thr Arg Tyr Arg Ser Thr Gly Leu Thr Glu Gly Leu Glu
E--> 4337           23490           23495           23500
     4338 Tyr Glu His Arg Val Thr Ala Ile Asn Ala Arg Gly Ser Gly Lys Pro
E--> 4339 23505           23510           23515           23520
     4340 Ser Arg Pro Ser Lys Pro Ile Val Ala Met Asp Pro Ile Ala Pro Pro
E--> 4341           23525           23530           23535
     4342 Gly Lys Pro Gln Asn Pro Arg Val Thr Asp Thr Thr Arg Thr Ser Val
E--> 4343           23540           23545           23550
     4344 Ser Leu Ala Trp Ser Val Pro Glu Asp Glu Gly Gly Ser Lys Val Thr
E--> 4345           23555           23560           23565
     4346 Gly Tyr Leu Ile Glu Met Gln Lys Val Asp Gln His Glu Trp Thr Lys
E--> 4347           23570           23575           23580
     4348 Cys Asn Thr Thr Pro Thr Lys Ile Arg Glu Tyr Thr Leu Thr His Leu
E--> 4349 23585           23590           23595           23600
     4350 Pro Gln Gly Ala Glu Tyr Arg Phe Arg Val Leu Ala Cys Asn Ala Gly
E--> 4351           23605           23610           23615
     4352 Gly Pro Gly Glu Pro Ala Glu Val Pro Gly Thr Val Lys Val Thr Glu
E--> 4353           23620           23625           23630
     4354 Met Leu Glu Tyr Pro Asp Tyr Glu Leu Asp Glu Arg Tyr Gln Glu Gly
E--> 4355           23635           23640           23645
     4356 Ile Phe Val Arg Gln Gly Gly Val Ile Arg Leu Thr Ile Pro Ile Lys
E--> 4357           23650           23655           23660
     4358 Gly Lys Pro Phe Pro Ile Cys Lys Trp Thr Lys Glu Gly Gln Asp Ile
E--> 4359 23665           23670           23675           23680
     4360 Ser Lys Arg Ala Met Ile Ala Thr Ser Glu Thr His Thr Glu Leu Val
E--> 4361           23685           23690           23695
     4362 Ile Lys Glu Ala Asp Arg Gly Asp Ser Gly Thr Tyr Asp Leu Val Leu
E--> 4363           23700           23705           23710
     4364 Glu Asn Lys Cys Gly Lys Lys Ala Val Tyr Ile Lys Val Arg Val Ile
E--> 4365           23715           23720           23725
     4366 Gly Ser Pro Asn Ser Pro Glu Gly Pro Leu Glu Tyr Asp Asp Ile Gln
E--> 4367           23730           23735           23740
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      4368 Val Arg Ser Val Arg Val Ser Trp Arg Pro Pro Ala Asp Asp Gly Gly
E--> 4369 23745               23750           23755               23760
      4370 Ala Asp Ile Leu Gly Tyr Ile Leu Glu Arg Arg Glu Val Pro Lys Ala
E--> 4371               23765           23770               23775
      4372 Ala Trp Tyr Thr Ile Asp Ser Arg Val Arg Gly Thr Ser Leu Val Val
E--> 4373               23780           23785               23790
      4374 Lys Gly Leu Lys Glu Asn Val Glu Tyr His Phe Arg Val Ser Ala Glu
E--> 4375               23795           23800               23805
      4376 Asn Gln Phe Gly Ile Ser Lys Pro Leu Lys Ser Glu Glu Pro Val Thr
E--> 4377       23810           23815           23820
      4378 Pro Lys Thr Pro Leu Asn Pro Pro Glu Pro Pro Ser Asn Pro Pro Glu
E--> 4379 23825               23830           23835               23840
      4380 Val Leu Asp Val Thr Lys Ser Ser Val Ser Leu Ser Trp Ser Arg Pro
E--> 4381               23845           23850               23855
      4382 Lys Asp Asp Gly Gly Ser Arg Val Thr Gly Tyr Tyr Ile Glu Arg Lys
E--> 4383               23860           23865           23870
      4384 Glu Thr Ser Thr Asp Lys Trp Val Arg His Asn Lys Thr Gln Ile Thr
E--> 4385               23875           23880               23885
      4386 Thr Thr Met Tyr Thr Val Thr Gly Leu Val Pro Asp Ala Glu Tyr Gln
E--> 4387       23890           23895           23900
      4388 Phe Arg Ile Ile Ala Gln Asn Asp Val Gly Leu Ser Glu Thr Ser Pro
E--> 4389 23905               23910           23915               23920
      4390 Ala Ser Glu Pro Val Val Cys Lys Asp Pro Phe Asp Lys Pro Ser Gln
E--> 4391               23925           23930               23935
      4392 Pro Gly Glu Leu Glu Ile Leu Ser Ile Ser Lys Asp Ser Val Thr Leu
E--> 4393               23940           23945               23950
      4394 Gln Trp Glu Lys Pro Glu Cys Asp Gly Gly Lys Glu Ile Leu Gly Tyr
E--> 4395       23955           23960           23965
      4396 Trp Val Glu Tyr Arg Gln Ser Gly Asp Ser Ala Trp Lys Lys Ser Asn
E--> 4397       23970           23975           23980
      4398 Lys Glu Arg Ile Lys Asp Lys Gln Phe Thr Ile Gly Gly Leu Leu Glu
E--> 4399 23985               23990           23995               24000
      4400 Ala Thr Glu Tyr Glu Phe Arg Val Phe Ala Glu Asn Glu Thr Gly Leu
E--> 4401               24005           24010               24015
      4402 Ser Arg Pro Arg Arg Thr Ala Met Ser Ile Lys Thr Lys Leu Thr Ser
E--> 4403               24020           24025               24030
      4404 Gly Glu Ala Pro Gly Ile Arg Lys Glu Met Lys Asp Val Thr Thr Lys
E--> 4405               24035           24040               24045
      4406 Leu Gly Glu Ala Ala Gln Leu Ser Cys Gln Ile Val Gly Arg Pro Leu
E--> 4407               24050           24055           24060
      4408 Pro Asp Ile Lys Trp Tyr Arg Phe Gly Lys Glu Leu Ile Gln Ser Arg
E--> 4409 24065               24070           24075               24080
      4410 Lys Tyr Lys Met Ser Ser Asp Gly Arg Thr His Thr Leu Thr Val Met
E--> 4411               24085           24090               24095
      4412 Thr Glu Glu Gln Glu Asp Glu Gly Val Tyr Thr Cys Ile Ala Thr Asn
E--> 4413               24100           24105               24110
      4414 Glu Val Gly Glu Val Glu Thr Ser Ser Lys Leu Leu Leu Gln Ala Thr
E--> 4415               24115           24120               24125
      4416 Pro Gln Phe His Pro Gly Tyr Pro Leu Lys Glu Lys Tyr Tyr Gly Ala
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                    RAW SEQUENCE LISTING            DATE: 05/30/2001
                    PATENT APPLICATION:  US/09/759,508A   TIME: 11:49:02

                    Input Set : A:\00786.381002.SEQLIST.TXT
                    Output Set: C:\CRF3\05302001\I759508A.raw


E--> 4417     24130                24135                24140
     4418 Val Gly Ser Thr Leu Arg Leu His Val Met Tyr Ile Gly Arg Pro Val
E--> 4419 24145                24150                24155                24160
     4420 Pro Ala Met Thr Trp Phe His Gly Gln Lys Leu Leu Gln Asn Ser Glu
E--> 4421                24165                24170                24175
     4422 Asn Ile Thr Ile Glu Asn Thr Glu His Tyr Thr His Leu Val Met Lys
E--> 4423                24180                24185                24190
     4424 Asn Val Gln Arg Lys Thr His Ala Gly Lys Tyr Lys Val Gln Leu Ser
E--> 4425                24195                24200                24205
     4426 Asn Val Phe Gly Thr Val Asp Ala Ile Leu Asp Val Glu Ile Gln Asp
E--> 4427                24210                24215                24220
     4428 Lys Pro Asp Lys Pro Thr Gly Pro Ile Val Ile Glu Ala Leu Leu Lys
E--> 4429 24225                24230                24235                24240
     4430 Asn Ser Ala Val Ile Ser Trp Lys Pro Pro Ala Asp Asp Gly Gly Ser
E--> 4431                24245                24250                24255
     4432 Trp Ile Thr Asn Tyr Val Val Glu Lys Cys Glu Ala Lys Glu Gly Ala
E--> 4433                24260                24265                24270
     4434 Glu Trp Gln Leu Val Ser Ser Ala Ile Ser Val Thr Thr Cys Arg Ile
E--> 4435                24275                24280                24285
     4436 Val Asn Leu Thr Glu Asn Ala Gly Tyr Tyr Phe Arg Val Ser Ala Gln
E--> 4437                24290                24295                24300
     4438 Asn Thr Phe Gly Ile Ser Asp Pro Leu Glu Val Ser Ser Val Val Ile
E--> 4439 24305                24310                24315                24320
     4440 Ile Lys Ser Pro Phe Glu Lys Pro Gly Ala Pro Gly Lys Pro Thr Ile
E--> 4441                24325                24330                24335
     4442 Thr Ala Val Thr Lys Asp Ser Cys Val Val Ala Trp Lys Pro Pro Ala
E--> 4443                24340                24345                24350
     4444 Ser Asp Gly Gly Ala Lys Ile Arg Asn Tyr Tyr Leu Glu Lys Arg Glu
E--> 4445                24355                24360                24365
     4446 Lys Lys Gln Asn Lys Trp Ile Ser Val Thr Thr Glu Glu Ile Arg Glu
E--> 4447                24370                24375                24380
     4448 Thr Val Phe Ser Val Lys Asn Leu Ile Glu Gly Leu Glu Tyr Glu Phe
E--> 4449 24385                24390                24395                24400
     4450 Arg Val Lys Cys Glu Asn Leu Gly Gly Glu Ser Glu Trp Ser Glu Ile
E--> 4451                24405                24410                24415
     4452 Ser Glu Pro Ile Thr Pro Lys Ser Asp Val Pro Ile Gln Ala Pro His
E--> 4453                24420                24425                24430
     4454 Phe Lys Glu Glu Leu Arg Asn Leu Asn Val Arg Tyr Gln Ser Asn Ala
E--> 4455                24435                24440                24445
     4456 Thr Leu Val Cys Lys Val Thr Gly His Pro Lys Pro Ile Val Lys Trp
E--> 4457                24450                24455                24460
     4458 Tyr Arg Gln Gly Lys Glu Ile Ile Ala Asp Gly Leu Lys Tyr Arg Ile
E--> 4459 24465                24470                24475                24480
     4460 Gln Glu Phe Lys Gly Gly Tyr His Gln Leu Ile Ile Ala Ser Val Thr
E--> 4461                24485                24490                24495
     4462 Asp Asp Asp Ala Thr Val Tyr Gln Val Arg Ala Thr Asn Gln Gly Gly
E--> 4463                24500                24505                24510
     4464 Ser Val Ser Gly Thr Ala Ser Leu Glu Val Glu Val Pro Ala Lys Ile
E--> 4465                24515                24520                24525
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      4466 His Leu Pro Lys Thr Leu Glu Gly Met Gly Ala Val His Ala Leu Arg
E--> 4467      24530             24535             24540
      4468 Gly Glu Val Val Ser Ile Lys Ile Pro Phe Ser Gly Lys Pro Asp Pro
E--> 4469 24545             24550             24555             24560
      4470 Val Ile Thr Trp Gln Lys Gly Gln Asp Leu Ile Asp Asn Asn Gly His
E--> 4471             24565             24570             24575
      4472 Tyr Gln Val Ile Val Thr Arg Ser Phe Thr Ser Leu Val Phe Pro Asn
E--> 4473             24580             24585             24590
      4474 Gly Val Glu Arg Lys Asp Ala Gly Phe Tyr Val Val Cys Ala Lys Asn
E--> 4475             24595             24600             24605
      4476 Arg Phe Gly Ile Asp Gln Lys Thr Val Glu Leu Asp Val Ala Asp Val
E--> 4477      24610             24615             24620
      4478 Pro Asp Pro Pro Arg Gly Val Lys Val Ser Asp Ala Ser Arg Asp Ser
E--> 4479 24625             24630             24635             24640
      4480 Val Asn Leu Thr Trp Thr Glu Pro Ala Ser Asp Gly Gly Ser Lys Ile
E--> 4481             24645             24650             24655
      4482 Thr Asn Tyr Ile Val Glu Lys Cys Ala Thr Thr Ala Glu Arg Trp Leu
E--> 4483             24660             24665             24670
      4484 Arg Val Gly Gln Ala Arg Glu Thr Arg Tyr Thr Val Ile Asn Leu Phe
E--> 4485             24675             24680             24685
      4486 Gly Lys Thr Ser Tyr Gln Phe Arg Val Ile Ala Glu Asn Lys Phe Gly
E--> 4487      24690             24695             24700
      4488 Leu Ser Lys Pro Ser Glu Pro Ser Glu Pro Thr Ile Thr Lys Glu Asp
E--> 4489 24705             24710             24715             24720
      4490 Lys Thr Arg Ala Met Asn Tyr Asp Glu Glu Val Asp Glu Thr Arg Glu
E--> 4491             24725             24730             24735
      4492 Val Ser Met Thr Lys Ala Ser His Ser Ser Thr Lys Glu Leu Tyr Glu
E--> 4493             24740             24745             24750
      4494 Lys Tyr Met Ile Ala Glu Asp Leu Gly Arg Gly Glu Phe Gly Ile Val
E--> 4495             24755             24760             24765
      4496 His Arg Cys Val Glu Thr Ser Ser Lys Lys Thr Tyr Met Ala Lys Phe
E--> 4497      24770             24775             24780
      4498 Val Lys Val Lys Gly Thr Asp Gln Val Leu Val Lys Lys Glu Ile Ser
E--> 4499 24785             24790             24795             24800
      4500 Ile Leu Asn Ile Ala Arg His Arg Asn Ile Leu His Leu His Glu Ser
E--> 4501             24805             24810             24815
      4502 Phe Glu Ser Met Glu Glu Leu Val Met Ile Phe Glu Phe Ile Ser Gly
E--> 4503             24820             24825             24830
      4504 Leu Asp Ile Phe Glu Arg Ile Asn Thr Ser Ala Phe Glu Leu Asn Glu
E--> 4505             24835             24840             24845
      4506 Arg Glu Ile Val Ser Tyr Val His Gln Val Cys Glu Ala Leu Gln Phe
E--> 4507      24850             24855             24860
      4508 Leu His Ser His Asn Ile Gly His Phe Asp Ile Arg Pro Glu Asn Ile
E--> 4509 24865             24870             24875             24880
      4510 Ile Tyr Gln Thr Arg Arg Ser Ser Thr Ile Lys Ile Ile Glu Phe Gly
E--> 4511             24885             24890             24895
      4512 Gln Ala Arg Gln Leu Lys Pro Gly Asp Asn Phe Arg Leu Leu Phe Thr
E--> 4513             24900             24905             24910
      4514 Ala Pro Glu Tyr Tyr Ala Pro Glu Val His Gln His Asp Val Val Ser
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E--> 4515          24915               24920               24925
     4516 Thr Ala Thr Asp Met Trp Ser Leu Gly Thr Leu Val Tyr Val Leu Leu
E--> 4517          24930               24935               24940    ·
     4518 Ser Gly Ile Asn Pro Phe Leu Ala Glu Thr Asn Gln Gln Ile Ile Glu
E--> 4519 24945               24950               24955               24960
     4520 Asn Ile Met Asn Ala Glu Tyr Thr Phe Asp Glu Glu Ala Phe Lys Glu
E--> 4521               24965               24970               24975
     4522 Ile Ser Ile Glu Ala Met Asp Phe Val Asp Arg Leu Leu Val Lys Glu
E--> 4523          24980               24985               24990    ·
     4524 Arg Lys Ser Arg Met Thr Ala Ser Glu Ala Leu Gln His Pro Trp Leu ·
E--> 4525          24995               25000               25005
     4526 Lys Gln Lys Ile Glu Arg Val Ser Thr Lys Val Ile Arg Thr Leu Lys
E--> 4527     25010               25015               25020
     4528 His Arg Arg Tyr Tyr His Thr Leu Ile Lys Lys Asp Leu Asn Met Val
E--> 4529 25025               25030               25035               25040
     4530 Val Ser Ala Ala Arg Ile Ser Cys Gly Gly Ala Ile Arg Ser Gln Lys
E--> 4531               25045               25050               25055
     4532 Gly Val Ser Val Ala Lys Val Lys Val Ala Ser Ile Glu Ile Gly Pro
E--> 4533               25060               25065               25070
     4534 Val Ser Gly Gln Ile Met His Ala Val Gly Glu Glu Gly Gly His Val
E--> 4535          25075               25080               25085
     4536 Lys Tyr Val Cys Lys Ile Glu Asn Tyr Asp Gln Ser Thr Gln Val Thr
E--> 4537     25090               25095               25100
     4538 Trp Tyr Phe Gly Val Arg Gln Leu Glu Asn Ser Glu Lys Tyr Glu Ile
E--> 4539 25105               25110               25115          ·    25120
     4540 Thr Tyr Glu Asp Gly Val Ala Ile Leu Tyr Val Lys Asp Ile Thr Lys
E--> 4541               25125               25130               25135
     4542 Leu Asp Asp Gly Thr Tyr Arg Cys Lys Val Val Asn Asp Tyr Gly Glu
E--> 4543          25140               25145               25150
     4544 Asp Ser Ser Tyr Ala Glu Leu Phe Val Lys Gly Val Arg Glu Val Tyr
E--> 4545          25155               25160               25165
     4546 Asp Tyr Tyr Cys Arg Arg Thr Met Lys Lys Ile Lys Arg Arg Thr Asp
E--> 4547     25170          . 25175               25180
     4548 Thr Met Arg Leu Leu Glu Arg Pro Pro Glu Phe Thr Leu Pro Leu Tyr
E--> 4549 25185               25190               25195               25200
     4550 Asn Lys Thr Ala Tyr Val Gly Glu Asn Val Arg Phe Gly Val Thr Ile
E--> 4551          25205               25210               25215
     4552 Thr Val His Pro Glu Pro His Val Thr Trp Tyr Lys Ser Gly Gln Lys
E--> 4553          25220               25225               25230
     4554 Ile Lys Pro Gly Asp Asn Asp Lys Lys Tyr Thr Phe Glu Ser Asp Lys
E--> 4555     25235               25240               25245
     4556 Gly Leu Tyr Gln Leu Thr Ile Asn Ser Val Thr Thr Asp Asp Asp Ala
E--> 4557     25250               25255               25260
     4558 Glu Tyr Thr Val Val Ala Arg Asn Lys Tyr Gly Glu Asp Ser Cys Lys
E--> 4559 25265               25270               25275               25280
     4560 Ala Lys Leu Thr Val Thr Leu His Pro Pro Pro Thr Asp Ser Thr Leu
E--> 4561          25285               25290               25295
     4562 Arg Pro Met Phe Lys Arg Leu Leu Ala Asn Ala Glu Cys Gln Glu Gly
E--> 4563          25300               25305               25310
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      4564 Gln Ser Val Cys Phe Glu Ile Arg Val Ser Gly Ile Pro Pro Pro Thr
E--> 4565           25315           25320           25325
      4566 Leu Lys Trp Glu Lys Asp Gly Gln Pro Leu Ser Leu Gly Pro Asn Ile
E--> 4567           25330           25335           25340
      4568 Glu Ile Ile His Glu Gly Leu Asp Tyr Tyr Ala Leu His Ile Arg Asp
E--> 4569 25345           25350           25355           25360
      4570 Thr Leu Pro Glu Asp Thr Gly Tyr Tyr Arg Val Thr Ala Thr Asn Thr
E--> 4571           25365           25370           25375
      4572 Ala Gly Ser Thr Ser Cys Gln Ala His Leu Gln Val Glu Arg Leu Arg
E--> 4573           25380           25385           25390
      4574 Tyr Lys Lys Gln Glu Phe Lys Ser Lys Glu Glu His Glu Arg His Val
E--> 4575           25395           25400           25405
      4576 Gln Lys Gln Ile Asp Lys Thr Leu Arg Met Ala Glu Ile Leu Ser Gly
E--> 4577           25410           25415           25420
      4578 Thr Glu Ser Val Pro Leu Thr Gln Val Ala Lys Glu Ala Leu Arg Glu
E--> 4579 25425           25430           25435           25440
      4580 Ala Ala Val Leu Tyr Lys Pro Ala Val Ser Thr Lys Thr Val Lys Gly
E--> 4581           25445           25450           25455
      4582 Glu Phe Arg Leu Glu Ile Glu Glu Lys Lys Glu Glu Arg Lys Leu Arg
E--> 4583           25460           25465           25470
      4584 Met Pro Tyr Asp Val Pro Glu Pro Arg Lys Tyr Lys Gln Thr Thr Ile
E--> 4585           25475           25480           25485
      4586 Glu Glu Asp Gln Arg Ile Lys Gln Phe Val Pro Met Ser Asp Met Lys
E--> 4587           25490           25495           25500
      4588 Trp Tyr Lys Lys Ile Arg Asp Gln Tyr Glu Met Pro Gly Lys Leu Asp
E--> 4589 25505           25510           25515           25520
      4590 Arg Val Val Gln Lys Arg Pro Lys Arg Ile Arg Leu Ser Arg Trp Glu
E--> 4591           25525           25530           25535
      4592 Gln Phe Tyr Val Met Pro Leu Pro Arg Ile Thr Asp Gln Tyr Arg Pro
E--> 4593           25540           25545           25550
      4594 Lys Trp Arg Ile Pro Lys Leu Ser Gln Asp Asp Leu Glu Ile Val Arg
E--> 4595           25555           25560           25565
      4596 Pro Ala Arg Arg Arg Thr Pro Ser Pro Asp Tyr Asp Phe Tyr Tyr Arg
E--> 4597           25570           25575           25580
      4598 Pro Arg Arg Arg Ser Leu Gly Asp Ile Ser Asp Glu Glu Leu Leu Leu
E--> 4599 25585           25590           25595           25600
      4600 Pro Ile Asp Asp Tyr Leu Ala Met Lys Arg Thr Glu Glu Glu Arg Leu
E--> 4601           25605           25610           25615
      4602 Arg Leu Glu Glu Glu Leu Glu Leu Gly Phe Ser Ala Ser Pro Pro Ser
E--> 4603           25620           25625           25630
      4604 Arg Ser Pro Pro His Phe Glu Leu Ser Ser Leu Arg Tyr Ser Ser Pro
E--> 4605           25635           25640           25645
      4606 Gln Ala His Val Lys Val Glu Glu Thr Arg Lys Asn Phe Arg Tyr Ser
E--> 4607           25650           25655           25660
      4608 Thr Tyr His Ile Pro Thr Lys Ala Glu Ala Ser Thr Ser Tyr Ala Glu
E--> 4609 25665           25670           25675           25680
      4610 Leu Arg Glu Arg His Ala Gln Ala Ala Tyr Arg Gln Pro Lys Gln Arg
E--> 4611           25685           25690           25695
      4612 Gln Arg Ile Met Ala Glu Arg Glu Asp Glu Glu Leu Leu Arg Pro Val
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E--> 4613           25700           25705           25710
     4614 Thr Thr Thr Gln His Leu Ser Glu Tyr Lys Ser Glu Leu Asp Phe Met
E--> 4615           25715           25720           25725
     4616 Ser Lys Glu Glu Lys Ser Arg Lys Lys Ser Arg Arg Gln Arg Glu Val
E--> 4617      25730           25735           25740
     4618 Thr Glu Ile Thr Glu Ile Glu Glu Glu Tyr Glu Ile Ser Lys His Ala
E--> 4619 25745           25750           25755           25760
     4620 Gln Arg Glu Ser Ser Ser Ser Ala Ser Arg Leu Leu Arg Arg Arg Arg
E--> 4621           25765           25770           25775
     4622 Ser Leu Ser Pro Thr Tyr Ile Glu Leu Met Arg Pro Val Ser Glu Leu
E--> 4623           25780         · 25785           25790
     4624 Ile Arg Ser Arg Pro Gln Pro Ala Glu Glu Tyr Glu Asp Asp Thr Glu
E--> 4625           25795           25800           25805
     4626 Arg Arg Ser Pro Thr Pro Glu Arg Thr Arg Pro Arg Ser Pro Ser Pro
E--> 4627      25810           25815           25820
     4628 Val Ser Ser Glu Arg Ser Leu Ser Arg Phe Glu Arg Ser Ala Arg Phe
E--> 4629 25825           25830           25835           25840
     4630 Asp Ile Phe Ser Arg Tyr Glu Ser Met Lys Ala Ala Leu Lys Thr Gln
E--> 4631           25845           25850           25855
     4632 Lys Thr Ser Glu Arg Lys Tyr Glu Val Leu Ser Gln Gln Pro Phe Thr
E--> 4633           25860           25865           25870
     4634 Leu Asp His Ala Pro Arg Ile Thr Leu Arg Met Arg Ser His Arg Val
E--> 4635           25875           25880           25885
     4636 Pro Cys Gly Gln Asn Thr Arg Phe Ile Leu Asn Val Gln Ser Lys Pro
E--> 4637      25890           25895           25900
     4638 Thr Ala Glu Val Lys Trp Tyr His Asn Gly Val Glu Leu Gln Glu Ser
E--> 4639 25905           25910           25915           25920
     4640 Ser Lys Ile His Tyr Thr Asn Thr Ser Gly Val Leu Thr Leu Glu Ile
E--> 4641           25925           25930           25935
     4642 Leu Asp Cys His Thr Asp Asp Ser Gly Thr Tyr Arg Ala Val Cys Thr
E--> 4643           25940           25945           25950
     4644 Asn Tyr Lys Gly Glu Ala Ser Asp Tyr Ala Thr Leu Asp Val Thr Gly
E--> 4645           25955           25960           25965
     4646 Gly Asp Tyr Thr Thr Tyr Ala Ser Gln Arg Arg Asp Glu Glu Val Pro
E--> 4647      25970           25975           25980
     4648 Arg Ser Val Phe Pro Glu Leu Thr Arg Thr Glu Ala Tyr Ala Val Pro
E--> 4649 25985           25990           25995           26000
     4650 Ser Phe Lys Lys Thr Ser Glu Met Glu Ala Ser Ser Ser Val Arg Glu
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VERIFICATION SUMMARY   DATE: 05/30/2001
PATENT APPLICATION: **US/09/759,508A**   TIME: 11:49:03

Input Set : **A:\00786.381002.SEQLIST.TXT**
Output Set: **C:\CRF3\05302001\I759508A.raw**

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L:2661 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:2663 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
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